GDT™
GEOGRAPHIC
DATA TECHNOLOGY

USER MANUAL

Dynamap®/Routing

version 4.3

2002

PN:Route43

Introduction 1

In This Section:

- *What is Dynamap/Routing?*
- *Improvements*
- *The GDT Master Street Database*

What is Dynamap/Routing?

Dynamap / Routing is a vector based, digital, geographic database in which streets and features are represented as line segments, polygons or points. The product is designed specifically with enhanced routing functionality. The data content and format have been designed to meet the needs of customers looking for a functionally optimized routing database for use with GDT-based geocoding and / or display databases.

Dynamap / Routing contains street segments as well as railroads, airports, point features such as churches, schools, public buildings, hospitals, area features (parks and golf courses) and water features. The product also contains county, place, state, nation and postal code boundaries. Street addresses are not included in this product.

Dynamap / Routing is the most data intensive nationwide routing street network available. There are more streets with routing information than in any other database. The currentness of the data and completeness of the coverage set Dynamap / Routing apart from all other commercially available databases.

The GDT master internal database is continuously updated with new streets, changes in street names and additions and changes to ZIP Codes. Over 3 million changes are made in a typical three-month period.

One-way information is contained in the street layer data. Dynamap / Routing includes important routing features such as impedance (cost), speed, length and from- and to-node elevation (f_zlev, t_zlev) to handle complex overpasses and underpasses.

Dynamap / Routing includes landmark layers such as airports, parks, recreational areas, transportation terminals, institutions, major retail centers, etc. The landmark structure will provide increased flexibility and a more useful product for your business geographics applications.

Features

COMPLETE
- Latitude and longitude coordinate pairs for nearly every street segment in the country
- Contains location of churches, schools, public buildings, major retail centers, hospitals, parks, train stations, bus and ferry terminals and airports
- Displays rivers, ponds, and lakes
- Highways
- County, Place, State, Nation and Postal Code Boundary layers

CURRENT
- Quarterly updates with over 3 million changes
- Current and accurate postal boundaries

ACCURATE
- Based on USPS standards

VERSATILE
- Can be used for a variety of routing applications. Available in ArcInfo, ArcView, and ASCII formats

SUPPORTED
- Comprehensive user documentation
- Toll-free customer support 9 am to 5 pm EST
- Online support request form

Geographic Coverage

Dynamap / Routing is available for all 50 states, the District of Columbia, Puerto Rico, and all Canadian provinces. It is available by county, state / province or nation. See the Appendix section of this manual for links to abbreviations and FIPS codes.

Layers

Dynamap / Routing includes the following layers:

Layer	Abb.	Tile	Feature
Highway	hy	County, State	Line
Street	st	County, State	Line
Street Alt. Name	sa	County, State	Info
Street FIPS Information	sf	County, State	Info
Turn Restriction	tn	County, State	Info
Toll	tl	County, State	Info
Maneuver	mn	County, State	Point
Exit	ex	County, State	Point
Railroad	rr	County, State	Line
Linear Water	lw	County, State	Line
Recreation Area	ra	County, State	Point
Transportation Terminal	tt	County, State	Point
Major Retail Center	rc	County, State	Point
Institution	in	County, State	Point
Airport	ap	County, State	Polygon
Airport Information	ai	County, State	Info
Large Area Landmark	al	County, State	Polygon
Park	pk	County, State	Polygon
Major Water	mw	County, State	Polygon
Water Polygon	wp	County, State	Polygon
Postal Code Inventory	pci	State	Point
Postal Code Boundary	pcb	State	Polygon
Postal Code Alt. Name	pca	State	Info
County Inventory	cyi	State	Point
County Boundary	cyb	State	Polygon
Populated Locality Inventory	pli	State	Point
Place Boundary	plb	State	Polygon
State Inventory	sti	Nation	Point
State Boundary	stb	Nation	Polygon
Nation Boundary	ntb	World	Polygon

* Filename extension is dependent on format

Some duplication of street or boundary segments may occur between layers. When working with more than

one layer you should be aware that the last drawn layer may cover a duplicate segment in one of the layers drawn earlier. Drawing any reference layers first and the layer of primary interest last will put the desired data where you can access it easily.

If you require additional boundary information, GDT offers a number of other boundary products.

Projection and Datum

Dynamap/Routing files are delivered in a geographic projection using latitude/longitude coordinate values with an implied six decimals of precision.

All coordinates are based on the 1983 North American Datum (NAD83). The datum is specified in a file named DATUM.TXT.

NOTES:

Changing projection may slightly affect coordinate precision resulting in less than exact overlays in enlarged views.
Nation boundaries are in WGS 84 datum.
Hawaii is in the Old Hawaiian Datum.

ZIP Data Currentness

5-digit ZIP boundary information in the Postal Code layers is current to August, 2002.

Generalization

Boundary layers, except for postal codes, have not been generalized. Every polygon (area surrounded by boundary segments) and every feature (geographic unit formed by one or more polygons) has as many points as are required to draw its shape accurately. Postal Code boundaries are generalized to a maximum of 4000 points per polygon.

Data Representation

LATITUDE/LONGITUDE DATA

Except for DIME format (ASCII) boundary files, all latitude and longitude coordinates are signed and have six decimal places. Northern latitudes are positive (0° to 90°), southern latitudes are negative (0° to -90°). West longitudes (including most of the USA) are negative (0° to -180°) and east longitudes are positive (0° to 180°).

DIME format boundary file coordinates are expressed as all positive values with six implied decimal places. Any longitude west of 180° is expressed in increasing, rather than decreasing values (181°, 182°, 183°, instead of 179°, 178°, 177°). No other east/west delineation is expressed.

SEWING

A state database will "sew" to the corresponding segments in the database from an adjacent state.

WATER

The coastal extreme of the US database is represented by the political boundary or twelve mile limit. Note that extensions into water are included in area calculations.

What is New with This Release

The highway network is continuously improved. This release includes:

- Currency update

The Highways Layer is derived from the Dynamap Highways/Routing product. The Highways Layer leverages existing strengths of GDT's street database, while increasing usability for long-distance routes.

The GDT Master Street Database

The GDT internal street network database, on which this product is based, contains nearly every street in the U.S. and Canada, and nearly every street in major metropolitan areas of Brazil and Argentina, and is constantly being updated. As new streets are reported, they are added by Digital Map Technicians (DMTs) working in teams assigned to specific geographic areas covering an entire nation.

GDT has many sources for new addresses. In the U.S., the primary ones are the monthly ZIP+4 transactions received from the U.S. Postal Service, E911 addresses (new city-style addresses assigned to homes in rural areas in order to conform to the 911 emergency response system) and customer enhancement requests.

As DMTs work through their particular regions, they concentrate on areas that contain the largest numbers of missing addresses, usually newly developed areas. They apply address ranges to unaddressed street segments, digitize new streets and correct inaccurate segment shapes. They are also continually adding useful attributes to street segments such as exits, turn restrictions and one-way restrictions. Each addition is verified with current maps and other data. Changes made each day are checked for accuracy before being applied to the master database.

The above modifications are part of GDT's initiatives aimed at improving the overall quality and usability of the data used in this product.

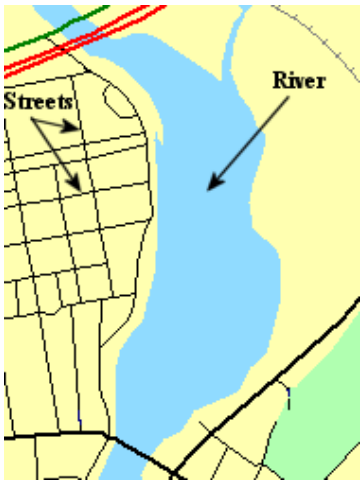
Feature Classification

Feature classification codes (FCCs) in some databases are based on the maintenance of streets and roads and can vary dramatically in different geographic areas.

To create a consistent nationwide highway system, GDT re-classifies almost every street and road in the master street database based on its use rather than its maintenance.

LANDMARK AND WATER IMPROVEMENT

Although lines are reasonable for streets, they often do not represent areas such as water very well. A river, for example, is represented by two lines that correspond to the two shorelines. GDT applies enhancement initiatives to fix and name these water features.



Getting Started 2

In This Section:

- *What's In This Package*
- *Directory Naming Conventions*
- *Copyright File*

What's In This Package

In addition to this manual you should receive:

- **Dynamap/Routing v 4.3 Files** which include:

  Dynamap/Routing in the desired format.

- **Packing Slip** (a printed or electronic list of package contents)
- **Documentation CD**

Check now to be sure that you have received the correct order.

For information on the installation of these files see the GDT *Data Installation* manual included on your Documentation CD.

Directory Naming Conventions

When you receive Dynamap/Routing, you can identify its contents by understanding our naming conventions. GDT uses a simple coding system to identify directories for its products.

\nat\st\stcnty

where **nat**, **st** and **cnty**, are the nation, state and county abbreviations, respectively. **Nat** is the 3 character ISO nation abbreviation; **st** is the 2-character state or province abbreviation and **cnty** is the 4 character county abbreviation. Note that **cnty** will be padded with "_" if the county name is not a full 4 characters long. For example: Bay County, Florida is "**flbay_*.***" not "**flbay*.***".

In addition there are 3 auxiliary files:

dynaname.*	Name correspondence file (in US coverage only)
datum.txt	Datum specification file
genf<stfips>.txt	Geographic Entity Name file

For a description of these files, see the section: Auxiliary Files in this manual.

Copyright File

The copyright file included with this product is one of the following:

File name	1st character of extension:	2nd and 3rd characters of extension:
cpyright.txx	**t**=carriage return/line feed	**xx**=fillers
cpyright.lxx	**l**=line feed	**xx**=fillers
cpyright.xxx	**x**=no delimiter	**xx**=fillers
cpyright.txt	text file	

and contains the following text:

Record Content 3

In This Section:

Features and Geographic Codes

Feature Class Codes (FCC)

The Feature Class Code (FCC) field indicates whether a segment is a street, highway, stream, etc. A complete list of FCCs used in Dynamap / Routing appears in the Appendix section.

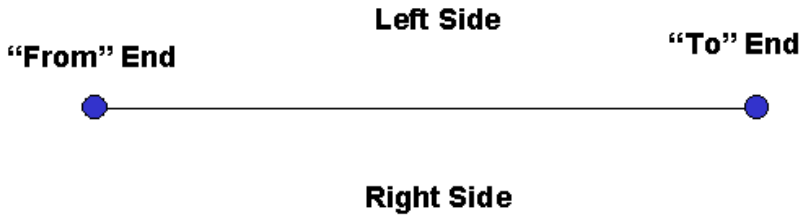
The FCC field is made up of an alpha character that defines the physical class of the feature and a numeric portion that further defines the subclass of the feature. A common feature class is "A40"; 'A' being the physical class of "ROAD"; and '40' being the qualifier of that class, "NEIGHBORHOOD ROAD".

Geographic Area Codes

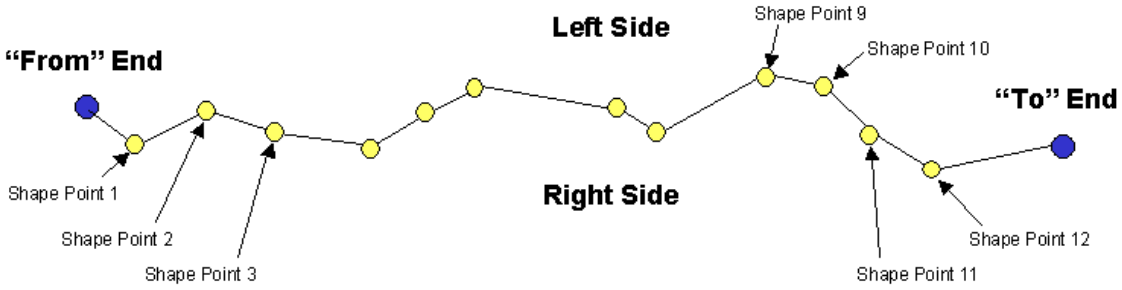
Dynamap / Routing contains FIPS codes for State, County, Place and MCD. Refer to the Street FIPS Information table in the record layouts for additional information. For Canada, these codes refer to the Province, Census Division, Urban Agglomeration and Census Subdivisions, respectively.

Linear Features

Linear features such as streets, highways and political or water boundaries are represented as line segments. Each segment has a "from" end, a "to" end, a left side and a right side. The "from" and "to" ends represent the digitized direction of the segments, not traffic flow direction.



A line segment can have shape nodes that indicate the position of intermediary points along that line.



Street Layers

STREET TYPES

See the Appendix section of this manual for lists of street types and their abbreviations found in GDT data. A street designator or type refers to the portion of a road name that is called "ST", "AVE", "PL" etc. Only road features have street designators or types.

NODE (SEGMENT END) ELEVATION

There are two node elevation fields, F_ZLEV (from end) and T_ZLEV (to end) for each segment. These fields contain a value to indicate planar connectivity for each end of the segment. The default value is 0 and can increase or decrease for each additional level needed. For two segments to route correctly, the elevations for the matching segments must be the same. At this time, these fields do NOT indicate which segment is above another, only that they are disconnected.

SHIELD TYPE:

The Shield field indicates which shield will be used to represent each name based on its Primary Highway Name. Valid types are: "T" = Trans-Canada, "A" = Autoroute, “I” = Interstate, “U” = US Hwy, “S” = State Hwy and blank = other.

HIGHWAY NUMBER:

The HWY_NUM field indicates the number or number/letter combination that appears in the shield for that highway. This will only be present for Interstates, US Highways, State Highways, Trans-Canadian Highways and Autoroutes.

SEGMENT LENGTH:

The SEG_LEN field contains the length of the segment (including shape nodes). The distance is calculated using the arc distance with correction for the earth’s curvature. Units are in miles. The precision is 4 decimal places.

ARTERIAL CLASSIFICATION CODE (ACC)

The set of Arterial Classification Codes (ACCs) is GDT's system for categorizing roads according to the level of travel mobility that they provide in the road network. Mobility refers to the volume of traffic that a stretch of road carries and the length of trip that it serves.

- Roads at the highest level of mobility (lowest ACC number) serve the greatest number of trips and the longest trips. High-mobility roads provide the lowest level of access to property.
- Descending through the table below, higher ACC numbers represent a decrease in relative importance to routing: a decrease in the number and length of routes using the road.

Valid ACC entries are "1", "2", "3", or "4". See table below.

ACC	Geographic Significance	Routing Importance
1	North America / Continental Inter-state	Largest / Longest Highways Connect Major / Largest Cities "Coast-to-Coast" Origin to Destination Interstate Commerce / Travel Intrastate Commerce / Travel
2	Inter-Metropolitan Area	Long / Large Highways
		Beltways / Secondary Freeways
		Connect Major Cities
3	Intra-State	Medium Highways
	Intra-Metropolitan Area	US/State Highway Network
	Inter-Metropolitan Area	Connect Minor Cities
		Intrastate Commerce
		Recreational Travel
4	City / County/Local	Local Arteries Retail Commerce Recreational Activities Initial Route Origin / Final Destination All other roads

SEGMENT SPEED FIELD:

The Segment SPEED field contains the average speeds categorized by FCC and defined in the *FCC to Speed* table located in the Reference Document section on this CD. The units are in miles per hour.

ONE-WAYS:

The One_Way field is filled with either "FT", "TF" or blank. "FT" indicates that the segment is one way, from the From end to the To end. "TF" indicates that the segment is one way from the To end to the From end. "Blank" indicates that travel is permitted in both directions.

SEGMENT IMPEDANCE:

Each segment has 2 fields named "FT_COST" and "TF_COST" which represent the cost to travel the segment in that direction in minutes. The values are based on the length of the segment and its speed value. If travel is impossible due to a one-way flag or FCC, these fields are set to –1. Units are in minutes. Precision is 5 decimal places. See *FCC to Speed* table to view routable FCCs.

NAVIGATIONAL DIRECTION:

The FT_Dir and TF_Dir fields convey information about the described direction of travel along roads. This directional is distinct from the existing directional suffix field in that it is not part of the recognized postal name. To accommodate single carriageway streets, two fields are used. Permissible values for this field are N,S,E,W,NE,SE,NW,SW.

NAME_FLAG

The Name_Flag provides additional information about the primary and alternate names along streets. This field can be used instead of the existing Name_Type field. The following information may be known about a given name:

- Routing – The name is most appropriate for statewide or cross-country directions
- Geocoding – The name is appropriate for geocoding applications
- Local – The name is most appropriate for local directions
- Historical – The name was once valid, but has been changed

The following table represents the number applied to each flag.

Name_Flag	Routing	Geocoding	Local	Historical
0	N	N	N	N
1	Y	N	N	N
2	N	Y	N	N
3	Y	Y	N	N
4	N	N	Y	N
5	Y	N	Y	N
6	N	Y	Y	N
7	Y	Y	Y	N
8	N	N	N	Y
9	Y	N	N	Y
10	N	Y	N	Y
11	Y	Y	N	Y
12	N	N	Y	Y
13	Y	N	Y	Y
14	N	Y	Y	Y
15	Y	Y	Y	Y

Highways Layer

The Highways layer is derived from the GDT Dynamap Highways/Routing product. Highways are extracted to include segments with an ACC of 1, 2 or 3. As a result, all ramps and connector roads necessary to route at a national, state and county level are included:

- Interstate highways
- Trans-Canada Hwy
- Canadian Autoroutes
- State highways
- Routes
- Expressways
- Ramps
- US highways
- Provincial highways
- Named highways
- Parkways
- Highways by other names
- Ferry routes (vehicular)

NOTE:
Some counties may not have a Highways layer.

Highway names are applied according to a layered hierarchy. Where a highway segment has more than one name, the higher level name will be used and always in this order: Interstates, then US Highways and then State Highways.

For example, the stretch of pavement near New London, Connecticut that is both “I 95” and “US HWY 1” has “I 95” as its primary name and “US HWY 1” as its secondary name. Highways can also have tertiary names that may be a highway type or street name (Main Street, for example).

Highways uses standard naming conventions for both prefixes and suffixes of all highways in the database as shown below.

Type	Name	Example
Interstates	I nnn	I 495
US Highways	US HWY nnn	US HWY 66
State Highways	STATE HWY nnn	STATE HWY 9

There are instances where the “official” name of a highway includes directionality: N, S, E or W. For example, in Texas there is an I 35E and an I 35W. The “E” and “W” are part of the official names.

Turn Restrictions Layer:

OVERPASS/UNDERPASS (Z_LEV):

All segments will contain node elevation (segment-end elevation) values to indicate planar connectivity. The default value is 0, but can range from -8 to 99 as needed.

Negative Z_lev values represent features which are underground. A feature at Z_lev=0 is on the surface of the Earth, whether or not it is under a manmade structure. I.e. a bridge spanning a river or street would have a Z_lev >=1.

MULTI-LEVEL:

Chains will be duplicated as necessary to maintain traffic flow for each level. Node elevation values will be used to distinguish each layer from the next. (Ex: I-93 entering Boston, bridges in San Francisco, San Diego, Los Angeles, etc.). These segments will each have unique Segment_IDs, not equal to layers above or below them. This will be represented by parallel segments with a separation of .00003 (30 micro degrees, approximately 10 feet.).

LEGAL (NO LEFT TURN, NO U-TURN, ETC.):

It is assumed that there is no turn restriction, UNLESS a turn restriction entry indicates the segment sequence, in correct order. (Ex: In the typical traffic circle, 2 short ramps exit and enter for each street involved. A turn restriction will prevent turning from a given circle exit ramp to the associated entrance ramp.) All past requested turn restrictions will be included. The Turn Restriction file references the subset of the Prohibited Maneuvers in the Maneuvers file that can be represented as isolated ordered pairs.

Maneuvers:

The Maneuver file gives detailed information about ordered sequences of segments in GDT's Dynamap/Routing database. Currently it lists restricted maneuvers by referencing the segment IDs involved. All turn restrictions previously delivered in the Turn Restriction layer are now delivered as Prohibited Maneuvers as well as Turn Restrictions to support different routing systems.

MAN_ID

This ID is unique per maneuver.

VIA1-5

These IDs, in order, reference all segments involved in the maneuver. As a result, the complete maneuver would be: From_id, <Via1>, <Via2>,…, <ViaN>, To_id.

FROM_ID

The Segment_ID of the segment being departed.

TO_ID

The Segment_ID of the segment to which access is restricted. If this ID is the same as the From_id, it refers to a U-turn. If it is a segment which is not adjacent to the From_id segment, then there will always be additional segments listed in the Via section to connect the two.

SEQUENCE

A separate record gives the information for each maneuver. Sequence ascends only when multiple records are needed to reference additional Via IDs. Only if a maneuver involves more than 5 "via" IDs in addition to the From_id and To_id will this be higher than "1"

MAN_TYPE

Indicates the maneuver type. Currently this will always be "P" for prohibited, but future iterations may expand to include other maneuver designations.

"P"= Prohibited

"R"= Right-of-way

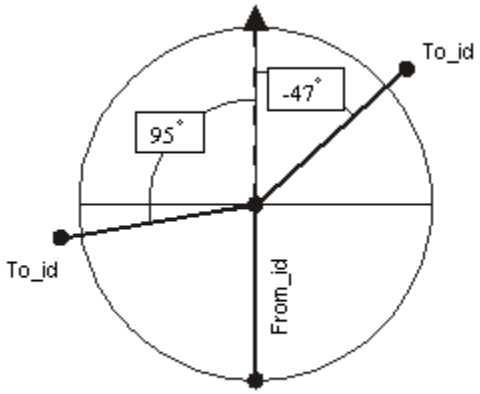
FROMID_END

The end of the From_id segment being departed, based on direction of digitization. All GDT segments are delivered with designated From and To ends. This is particularly important for U-turn indication, in order to know which end of a single-digitized segment has a U-turn restriction. If U-turns were restricted at both ends of a segment, two maneuver entries would be present.

"T" = To end "F" = From end

ANGLE

The angle of the To_id segment from the From_id segment. The angle measures the departure from straight per ESRI standards. This ranges in value from -179.99 to 180.00, and is the mathematical supplement to the interior angle of the two segments. Negative values indicate right turns, while positive values indicate left turns. U-turns generate a value of 180.00 with 2 decimal places of precision.



Angle measures deviance from straight, right = 0° - -179°, left = 0° - 180°.

COST

Currently the value of this field will always be -1.00000 to indicate that the turn is restricted.

HOO (HOURS OF OPERATION)

The GDF Time Domain specifications will be used to indicate the time period during which this maneuver is allowed. A basic Time Domain is the combination of a Starting Date and a Time Duration with the following notation:

[(Starting Date) {Time duration}]

e.g., [(M5d1){d1}] means :

Starting Date : any year, month 5 (May), day 1st, at 0:00am.

Time Duration: 1 complete day (i.e. 24 hours or 1440 minutes).

COORDINATES

If the maneuver may be represented as a turntable entry, i.e. if it involves a unique intersection of two adjacent segments at a node, then this point represents that node. If it cannot be represented as such, this represents the From_id node shared by the next segment in the maneuver. Coordinate information is typically not necessary in order to use the maneuver file, as it defines relationships between other objects. This information is provided for easy examination of maneuver locations. Implied 6 decimal places of precision.

Longitude
Longitude coordinate for the intersection / maneuver.

Latitude
Latitude coordinate for the intersection / maneuver.

Additional Dynamap Layers

Water Layers

Three water layers are provided in Dynamap / Routing: Linear Water, Major Water and Water Polygon. The Linear Water layer describes streams and small rivers. The Major Water and Water Polygon layers display all water features that can be represented by polygons such as lakes, large rivers and oceans.

NOTE:
Some counties may not have water or water polygon layers.

Landmark Layers

Landmark layers contain point and area landmark features. Landmark features are represented as the following layers: airports, parks, recreational areas, transportation terminals, institutions, major retail centers and large area landmarks. These layers include building, cemetery, church, hospital and school point landmarks from the US Department of the Interior Geographic Names Information System (GNIS).

NOTE:
Some counties may not have any landmark layers.

For a list of the available landmark features see *Feature Class Codes* in the Appendix of this manual.

Populated Locality Inventory Layer

Populated Locality Inventory layer files contain points representing all incorporated places and all State / Province capitals (including Washington, D.C. and Puerto Rico). In addition, this file contains selected locality points from the Geographic Names Information System (GNIS) populated place file.

There are 85,000 estimated Populated Locality Inventory points for the US.

Place Boundary Layer

UNITED STATES

The Place Boundary Layer files contain the geographic data required to depict Census Place (or community) boundary lines for the United States. Data is available for the nation by state tile.

CANADA

The Place Boundary Layer represents settled areas meeting a certain population density threshold. Data is available for the nation by province tile. The Key provided is unique in Canada and can be used to create a relationship to points in the populated locality inventory layer.

Postal Code Layer

UNITED STATES

Dynamap / Routing provides 5-Digit ZIP information. Postal codes can designate either areas or points as described below. See *Dynamap Definitions and Statistics* on the documentation CD for an explanation of Canadian features included in the Dynamap / Transportation products.

POLYGONS & POINT ZIPS

Street Delivery 5-digit ZIP codes identify **areas** where mail is delivered (from a city block or two to a whole rural town). These areas are represented by **polygons** and appear in both the Postal Code Boundary and Inventory files.

There are many other 5-digit ZIP Codes, however, that have no area and are represented as **points** rather than polygons. In other words, they appear as dots on a map with no area and, therefore, no boundaries. These are ZIPs which have no geographic extent defined in terms of street segments, or which

correspond to geography not defined in any Postal Service data files.

Examples of point ZIPs include Post Office box ZIPs and Unique ZIPs (single site, building or organization).

Point ZIPs are found in the Inventory files only, not in the Boundary files.

POINT ZIPS & ENCLOSING ZIPS

For all point ZIPs, the Postal Code Inventory file provides an enclosing ZIP to which data for that point ZIP can be mapped. The enclosing ZIP is identical for all entries that are located within the same ZIP.

An area calculation in square miles and a centroid in latitude/longitude coordinates is calculated for each ZIP Code. Point ZIPs by definition have no area and may have the same centroid as their enclosing ZIP.

Enclosing ZIPs are particularly important for Boundary file users who want to map point ZIPs to enclosing ZIPs.

To assign the enclosing ZIP, the actual location of the point is determined on a map. The boundary ZIP associated with the geographic location is the enclosing ZIP.

NOTE:
Universities, military bases, large hospitals, etc. may be defined as points or polygons.

ZIP CODES SERVING MANY LOCALITIES

ZIP Codes with one or more post offices may serve many localities. The term **Place Name** is Post Office terminology for an area inside a ZIP, which could include towns, parts of towns, airports and office complexes. When these have been defined, we have included them in the **NAME** field. Place Names are listed together for each ZIP Code, with the principal station in that ZIP not necessarily listed first. Check the **NAME_TYPE** field to verify which name is the main Post Office.

Where no place name was listed in the *USPS City/State File*, the parent post office name was used. If both fields were blank in the *USPS City/State File*, this field may be blank. The area and centroid fields for such entries represent the area and centroid for the entire ZIP Code. Therefore, these fields will be identical for all entries with the same ZIP Code.

PC_TYPE and **NAME_TYPE** information obtained directly from the *USPS City/State File* has been added to the Postal Code Inventory File to assist in identifying primary and box only ZIP Codes.

L in the **LASTL_FLAG** field means that the **place** in the name field is correct for use in an address last line, Lebanon, NH 03766, for example. An **N** indicates that it is not the name used in an address last line.

ANOMALIES

A small percentage of errors in coding can be expected in fields obtained directly from the *USPS City/State File.* Therefore, some coding may be contradictory to the polygonal representation of the ZIP. Some of the following may occur:

- A ZlP may have been coded incorrectly in the *USPS City/State File.*
- Single address delivery ZIPs (such as 245 Park Ave.) that are not represented as polygons in the Boundary file may be coded as Street Delivery.
- Point ZIPs represented as polygons in the Boundary File because they take up significant land area--usually a hospital, university, or military base in a metropolitan area where ZIP area for the point is recognized in Census TIGER/Line GRFN reference files--may be coded as Unique Point ZIPs.

For ZIP Codes that extend into more than one county, the FIPS Code of the county in which the greatest area of the ZIP Code polygon is located is listed as **CTY1FIPS**. The next greatest area is listed as **CTY2FIPS** and then, if applicable, **CTY3FIPS**. Additional counties are not listed if a ZIP Code

extends into more than three counties. County information is obtained from the ZIP Boundary file.

ZIP areas including one or more polygons may be divided by a county boundary. If the ZIP's polygons fall within the same county, the inventory will contain the centroid of the largest polygon. If a ZIP is divided by one or more county boundaries, the inventory will contain the centroid for the largest polygon in that ZIP.

DUPLICATE STATE FIPS CODES

There are six ZIP Codes listed in the Postal Code Inventory file with more than one state code. These are ZIPs with delivery areas that span a state boundary.

ZIP	Affected States
42223	KY, TN
57724	MT, SD
63673	IL, MO
71749	LA, AR
72395	TN, AR
73949	TX, OK

ZIP Type, Postal Facility and County Codes

UNITED STATES

ZIP TYPE CODES

ZIP Codes are identified by type in the PC_TYPE field of the Postal Code Inventory record. Type codes **(blank)**, **P**, **U** and **M** are from the *USPS City/State File.* Type code **G** is a GDT code for zero delivery areas.

ZIP Type	Description
N	Non-unique ZIP
P	PO Box
U	Unique ZIP
M	Military ZIP
G	GDT ZIP (zero delivery area)

NON-UNIQUE ZIPS

Any ZIP code that the USPS has not assigned to a specific organization, but rather to the City Place Name listed in the record is called a non-unique ZIP Code. Non-unique ZIPs are the most common of all ZIP Codes.

NOTE:
When a ZIP area is known by more than one name, the USPS has assigned additional records for the ZIP.

A City Place Name can have more than one ZIP Code assigned to that name; these are known as "multi ZIP-coded" cities. The ZIPs assigned in such cases can be both non-unique *and* unique ZIP Codes.

Multi-coded cities contain more than one 5-Digit ZIP Code for delivery within a finance number. Normally, further matching beyond just the *City/State File* is required to validate a 5-Digit ZIP Code. An example of a multi-coded city is Manchester, NH.

PO BOX ZIPS

The USPS uses PO Box ZIPs to identify ZIP Codes which are used for true post office box type addressing or non-carrier-delivery post offices.

UNIQUE ZIPS

A unique ZIP Code is one which the USPS has assigned to a business, site, or other organization. The name of the organization appears in the NAME field in unique ZIP Code records.

MILITARY ZIPS

Army and Air Force Post Offices and Navy Fleet Post Offices are given Military ZIPs, valid for APOs and FPOs in the given area *only*.

The county code for APO / FPOs is **601**. Files listing APO / FPOs are available from GDT. The Dynamap / 2000 user manual describes these files in the *Postal Statistics Files* section.

GDT ZIPs

Some areas, such as parks, forests, deserts and lakes have been assigned codes by GDT. These "GDT Zips" range from 00001 to 00199. The PC_TYPE field for these zero delivery areas are coded **G** by GDT. The NAME_TYPE field for GDT ZIPs is blank.

Post Office Facility Codes

Letter codes for facility types (NAME_TYPE field) below are from the *USPS City/State File.*

A	Airport Mail Facility
B	Branch
C	Community
D	Area Distribution Center
E	Sectional Center Facility
F	Delivery Distribution Center
G	General Mail Facility
K	Bulk Mail Center
M	Money Order Unit
N	Non-postal Name
P	Post Office
S	Station
U	Urbanization
" "	(blank) GDT designated ZIP area

NOTE:
Branch P.O. name may be preferable to Main P.O. for labeling purposes.

County FIPS Codes

County information is obtained from GDT's ZIP Boundary file which is updated quarterly. **CTY2FIPS**and **CTY3FIPS** are used for second and third counties in which a ZIP is found. Counties listed are in order of greatest geographic area covered.

For unique point ZIPs represented as points, county information is assigned based on the geographic location of the point and verified manually by GDT operators.

CANADA

METHODOLOGY

FSAs are defined by a variety of sources, usually geographic, linking postal geography with Enumeration Area (EA) boundaries. The creation of the boundary file involves snapping FSA boundaries to EAs where no alternative descriptions are available. This is particularly useful in rural areas where available postal maps are much more generalized. Distribution of postal codes and street segments across EAs are used to determine which direction a split should take place in order to limit the bias created by overlapping boundaries.

CAVEATS

FSAs were not designed to respect standard geographic boundaries, except at the provincial level. Still there are occurrences when FSAs cross provincial boundaries, such as in Flin Flon, Manitoba / Saskatchewan; Lloydminster, Saskatchewan / Alberta; and Makaoo 120 Indian Reserve, Saskatchewan / Alberta.

Our methodology focuses on the ability to assign EAs to the most appropriate FSA. This approach involves some of the following basic compromises:

- FSAs do not respect EA boundaries and there are numerous occurrences of EAs that have mail delivered through two different FSAs. In these situations, all of the households in an EA are assigned to one and only one FSA.
- Although FSAs are often delineated by street boundaries, there are numerous occasions where a single FSA is used for both sides of the delineating

street. Since EAs are more likely to be delineated by a street, the EA will likely be split.

- FSAs are intended for mail delivery and sorting, and occasionally have no spatial reference. This explains the differences in the number of actual FSAs versus those with boundaries. These non-spatial FSAs are included since some household based databases aggregate to these FSAs.

There are also a number of FSAs that do not dominate the distribution of postal codes in any EA. Because these FSAs cannot be assigned by majority rule to any EA, they do not have a corresponding boundary. The postal code points are placed within a number of alternate FSA boundaries.

National Boundaries

The Nation Boundary layer is derived from the *National Imagery and Mapping Agency (NIMA).* This layer is based on the WGS 84 (World Geodetic Systems 1984) datum.

Airport Information

CONGESTION

S=Severe; **M**=Moderate; **U**=Uncongested; **O**=(should be in database, but entry missing)

SERVICE

PR=Primary commercial service airport;
CM=Commercial service other than primary airport;
CR=Commercial service airport that also serves as a reliever airport;
GA=General aviation airport;
RL=General aviation airport that serves as a reliever airport or heliport;
GP= General aviation airport that meets the criteria for a primary airport (PR) but has been declared ineligible to be a primary airport;
RP= General aviation airport that meets criteria for a primary airport (PR), serves as a reliever airport, but has been declared ineligible to be a primary airport.;
GC= General aviation airport that meets criteria for a commercial service other than a primary airport (CM), but has been declared ineligible to be a commercial airport.

HUB SIZE

L=Large; **M**=Medium; **S**=Small; **N**=Non-hub;
G=General aviation

TOWER TYPE

0=No tower; **1**=Tracon, Rapcon, Cerap; **2**=Radar tower; **3**=Limited radar tower; **4**=Non-radar tower; **5**=VFR tower; **6**=Non-FAA facility; **7**=Contract tower

ArcInfo Format 4

In This Section:

- *Introduction*
- *Directories and Files*
- *Spatial Indexing*
- *Record Layouts*

Introduction

Versions Supported

Dynamap / Routing 4.3 in Environmental Systems Research Institute (ESRI) ArcInfo format is designed for use with the following version of ArcInfo software:

ArcInfo 7.X and higher

Precision

ArcInfo format products are delivered in double precision.

Precision refers to the number of bits (single - 32 bits, double - 64 bits) used to store coordinate data. Coverages in double precision are slightly more accurate, but larger than those in single precision.

Native Format

ArcInfo coverages are shipped in native format (unEXPORTed) ready for use and do not need to be processed in any way. Native format ArcInfo coverages consist of the COVERAGE directory and an associated INFO directory.

Directories and Files

Dynamap/Routing in ArcInfo format comes in the following directories:

File/Coverage Naming:

State or Province-tiled data:

\
- All World-tiled layers
- datum.txt
- cpyright.txt
- ***nat***
  - All Nation-tiled layers
  - dynaname.dbf (USA only)
  - datum.txt
  - **\info**
  - ***st***
    - Place Boundary & Inventory files
    - County Boundary & Inventory files
    - Postal Code Boundary & Inventory files
    - All other files tiled by State
    - genf<***stfips***>.txt
    - datum.txt
    - **\info**

County-tiled data:

\
- All World-tiled layers
- datum.txt
- cpyright.txt
- ***nat***
  - All Nation-tiled layers
  - dynaname.
  - datum.txt
  - **\info**
  - ***st***
    - Place Boundary & Inventory files
    - County Boundary & Inventory files
    - Postal Code Boundary & Inventory files
    - All State-tiled layers
    - genf<***stfips***>.txt
    - datum.txt
    - **\info**
    - ***stcnty***
      - All County-tiled layers
      - datum.txt

where: ***nat*** = 3-character ISO Nation abbr. (usa,can,arg,bra) ***st*** = 2-digit State FIPS
cnty = 4-character County abbr. **x=** filler
stfips = 2-digit State FIPS

Spatial Indexing

Spatial indexes for drawing and query speed up graphic selection and drawing by 10 to 50 times. Spatial indexes are provided for all data layers. See the ArcInfo User's Guide for instructions.

Record Layouts

Notes:

Grey field(s) indicate format-specific internal fields
Type: B=Binary; **C**= Character; **F**=Floating Point; **I**=Integer
Justify: L=Left; **R**=Right; **F**=Filled. Note that this only applies to character fields and only when they contain data (Ex: the ONE_WAY field contains either "TF", "FT", or is blank.)
<cover># and <cover>-ID fields: "<cover>" represents the coverage name.
Canadian equivalents in Description fields: State=**Province or Territory**; County=**CD**; FIPS=**SGC**; Place=**UA**

LINEAR LAYERS:

Highway: *hy.aat

Item Name	Type	Width	Output	Dec.	Justify	Description
FNODE#	B	4	5			ArcInfo from node ID
TNODE#	B	4	5			ArcInfo to node ID
LPOLY#	B	4	5			ArcInfo left polygon ID
RPOLY#	B	4	5			ArcInfo right polygon ID
LENGTH	F	8	18	5		ArcInfo length
<cover>#	B	4	5			ArcInfo internal ID
<cover>-ID	B	4	5			ArcInfo user ID
SEGMENT_ID	B	4	10			Unique NorAm record number
PREFIX	C	2	2		L	Street prefix
NAME	C	40	40		L	Street name
TYPE	C	6	6		L	Street type
SUFFIX	C	2	2		L	Feature direction suffix
FCC	C	3	3		F	Feature Class Code
ACC	C	1	1		F	Arterial Classification Code
SHIELD	C	1	1		F	"T", "I", "U", "S", "A", or blank
HWY_NUM	C	5	5		L	#, # with letter, or blank
SEG_LEN	F	8	10	4		Segment length in miles
SPEED	I	3	3			Speed in miles per hour
ONE_WAY	C	2	2		F	One-way indicator
F_ZLEV	I	2	2			From node elevation
T_ZLEV	I	2	2			To node elevation
FT_COST	F	8	10	5		From-To Impedance in minutes
TF_COST	F	8	10	5		To-From Impedance in minutes
FT_DIR	C	2	2		L	From_To Direction
TF_DIR	C	2	2		L	To_From Direction
NAME_FLAG	I	3	3			Name metadata flag

Street: *st.aat

Item Name	Type	Width	Output	Dec.	Justify	Description
FNODE#	B	4	5			ArcInfo from node ID
TNODE#	B	4	5			ArcInfo to node ID
LPOLY#	B	4	5			ArcInfo left polygon ID
RPOLY#	B	4	5			ArcInfo right polygon ID
LENGTH	F	8	18	5		ArcInfo length
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
SEGMENT_ID	B	4	10			Unique NorAm record number
PREFIX	C	2	2		L	Street prefix
NAME	C	40	40		L	Street name
TYPE	C	6	6		L	Street type
SUFFIX	C	2	2		L	Feature direction suffix
FCC	C	3	3		F	Feature Class Code
ACC	C	1	1		F	Arterial Classification Code
SHIELD	C	1	1		F	“T”, “I”, “U”, “S”, “A”, or blank
HWY_NUM	C	5	5		L	#, # with letter, or blank
SEG_LEN	F	8	8	4		Segment length in miles
SPEED	I	3	3			Speed in miles per hour
ONE_WAY	C	2	2		F	One-way indicator
F_ZLEV	I	2	2			From node elevation
T_ZLEV	I	2	2			To node elevation
FT_COST	F	8	10	5		From-To Impedance in minutes
TF_COST	F	8	10	5		To-From Impedance in minutes
FT_DIR	C	2	2		L	From_To Direction
TF_DIR	C	2	2		L	To_From Direction
NAME_FLAG	I	3	3			Name metadata flag

Street Alternate Name: *sa.dat

Item Name	Type	Width	Output	Dec.	Justify	Description
SEGMENT_ID	B	4	10			Unique NorAm record number
SEQUENCE	I	1	1			Sequence number*
PREFIX	C	2	2		L	Street prefix
NAME	C	40	40		L	Street name
TYPE	C	6	6		L	Street type
SUFFIX	C	2	2		L	Feature direction suffix
SHIELD	C	1	1		F	“T”, “I”, “U”, “S”, “A”, or blank
HWY_NUM	C	5	5		R	#, # with letter, or blank
FT_DIR	C	2	2		L	From_To Direction
TF_DIR	C	2	2		L	To_From Direction
NAME_FLAG	I	3	3			Name metadata flag

Sequence number: This number represents the number of alternate names a segment has. It will start at 1 and increase to the number of the last alternate name. For example, if the segment has five alternate names then the sequence number will be 1- 5 for that segment ID.

Street FIPS Information: *sf.dat

Item Name	Type	Width	Output	Dec.	Justify	Description
DYNAMAP_ID	B	4	10			Unique record number
STATE00_L	C	2	2		L	2000 state FIPS left
STATE00_R	C	2	2		F	2000 state FIPS right
COUNTY00_L	C	3	3		F	2000 county FIPS left
COUNTY00_R	C	3	3		R	2000 county FIPS right
MCD00_L	C	5	5		F	2000 FIPS MCD/CCD left
MCD00_R	C	5	5		F	2000 FIPS MCD/CCD right
PLACE00_L	C	5	5		F	2000 FIPS Place left
PLACE00_R	C	5	5		F	2000 FIPS Place right

Toll: *tl.dat

Item Name	Type	Width	Output	Dec.	Justify	Description
DYNAMAP _ID	B	4	10			Unique NorAm record number
TOLL	C	1	1		F	“Y” = toll, "N" = no toll

Street Turn Table: *st.trn

Item Name	Type	Width	Output	Dec.	Justify	Description
NODE#	B	4	5			ArcInfo Node ID
ARC1#	B	4	5			ArcInfo From-arc ID
ARC2#	B	4	5			ArcInfo To-arc ID
AZIMUTH	F	4	12	3		Azimuth
ANGLE	F	4	12	3		Turn Angle
ARC1-ID	B	4	10			From-arc User ID
ARC2-ID	B	4	10			To-arc User ID
COST	F	8	10	3		“-1” if turn is restricted
MAN_ID	B	4	10			Unique Permanent Maneuver ID

Railroad: *rr.aat

Item Name	Type	Width	Output	Dec.	Justify	Description
FNODE#	B	4	5			ArcInfo from node ID
TNODE#	B	4	5			ArcInfo to node ID
LPOLY#	B	4	5			ArcInfo left polygon ID
RPOLY#	B	4	5			ArcInfo right polygon ID
LENGTH	F	8	18	5		ArcInfo length
<cover>#	B	4	5			ArcInfo internal ID
<cover>-ID	B	4	5			ArcInfo user ID
DYNAMAP_ID	B	4	10			Unique NorAm record number
NAME	C	40	40		L	Railroad name
FCC	C	3	3		F	Feature Class Code

Linear Water: *lw.aat

Item Name	Type	Width	Output	Dec.	Justify	Description
FNODE#	B	4	5			ArcInfo from node ID
TNODE#	B	4	5			ArcInfo to node ID
LPOLY#	B	4	5			ArcInfo left polygon ID
RPOLY#	B	4	5			ArcInfo right polygon ID
LENGTH	F	8	18	5		ArcInfo length
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ARC/INFO user ID
DYNAMAP_ID	B	4	10			Unique NorAm record number
NAME	C	40	40		L	Water feature name
FCC	C	3	3		F	Feature Class Code

POINT LAYERS:

Maneuver: *mn.pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMITER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
MAN_ID	B	4	10		R	Unique Permanent Maneuver ID
SEQUENCE	I	1	1		F	Sequence number of maneuver record
MAN_TYPE	C	1	1		F	Maneuver Type
FROM_ID	B	4	10		R	From Segment_ID
FROMID_END	C	1	1		F	"T" or "F" indicating end of From_ID
ANGLE	F	8	10	2	R	Turn angle from From_ID to To_ID
COST	F	8	10	5	R	Restricted = "-1"
HOO	C	100	100		R	Hours of Operation (GDF)
TO_ID	B	4	10		R	To/Destination Segment_ID
VIA1	B	4	10		R	Via Segment_ID 1
VIA2	B	4	10		R	Via Segment_ID 2
VIA3	B	4	10		R	Via Segment_ID 3
VIA4	B	4	10		R	Via Segment_ID 4
VIA5	B	4	10		R	Via Segment_ID 5
LONGITUDE	F	8	15	6	R	6 decimals of precision, signed
LATITUDE	F	8	13	6	R	6 decimals of precision, signed

Exit: *ex.pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
EXIT_ID	B	4	10		R	Unique NorAm record number
FROM_NAME	C	40	40		L	Highway name exit leaves
EXIT	C	10	10		R	Number(s) if applicable
TO_NAME	C	40	40		L	Highway/street name exit accesses

All Point Landmark Layers : *(in, ra, rc, tt) .pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Landmark name
FCC	C	3	3		F	Feature Class Code

Postal Code Inventory: <*st*>xx0pci.pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
POSTAL	C	5	5		L	5 digit (ZIP) or 3 digit (FSA) postal code
ENC_POSTAL	C	5	5		L	Enclosing ZIP or FSA
STATE	C	2	2			State 2-letter abbreviation
STFIPS	C	2	2			State FIPS
NAME	C	28	28		L	ZIP or FSA PO name
NAME_TYPE	C	30	30		L	Name Type
LASTL_FLAG	C	1	1			Lastline Flag
COUNTY1	C	20	20		L	Full County name 1
CTY1FIPS	C	3	3			County 1 FIPS
COUNTY2	C	20	20		L	Full County name 2
CTY2FIPS	C	3	3			County 2 FIPS
COUNTY3	C	20	20		L	Full County name 3
CTY3FIPS	C	3	3			County 3 FIPS
AREA_MI	F	8	10	3		Area in square miles
LATITUDE	F	8	13	6		Latitude
LONGITUDE	F	8	15	6		Longitude
RPO_FLAG	C	1	1			RPO Flag (“R” or blank)
PC_TYPE	C	20	20		L	Postal code type
PT_LOC	C	1	1			Point Location (“A” for actual)

Postal Code Alternate Names: <*st*>xx0pca.dat

Item Name	Type	Width	Output	Dec.	Justify	Description
POSTAL	C	5	5		L	5 digit (ZIP) or 3 digit (FSA) postal code
NAME1	C	28	28		L	Alternate postal name 1
NAME_TYPE1	C	30	30		L	Alternate postal name type 1
NAME2	C	28	28		L	etc.
NAME_TYPE2	C	30	30		L	
NAME3	C	28	28		L	
NAME_TYPE3	C	30	30		L	
NAME4	C	28	28		L	
NAME_TYPE4	C	30	30		L	
NAME5	C	28	28		L	
NAME_TYPE5	C	30	30		L	

County/CD Inventory: <*st*>xx0cyi.pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Full County or CD name
KEY	C	5	5		F	State FIPS code and County FIPS code

Populated Locality Inventory:<*st*>xx0pli.pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Cleaned name
KEY	C	10	10		L	State, County FIPS, Place code
CAPITAL	C	1	1		F	"Y" = State Capital (+DC & PR)
POPULATION	B	4	10		R	Population (if available)

State/Province Inventory: <*nt*>xx0sti.pat

Item Name	Type	Width	Output	Dec	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Full State or Province name
STATE	C	2	2		F	2- character State or Province
KEY	C	2	2		F	State FIPS or Province SGC code

POLYGON LAYERS:

No .AAT files will be present for polygonal layers.

Airport: *ap.pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Airport name
FCC	C	3	3		F	Feature Class Code
LOC_ID	C	4	4		L	3 or 4 character identifier

Airport Information: *ai.dat

Item Name	Type	Width	Output	Dec.	Justify	Description
NAME	C	40	40		L	Airport name
FCC	C	3	3		F	Feature Class Code
LOC_ID	C	4	4		L	3 or 4 character identifier
USE	C	2	2			public (PU); private (PR)
OWNER	C	29	29			
ELEVATION	C	5	5			
CONGESTION	C	1	1			congestion level
SERVICE	C	2	2			service level
LG_CERT_AC	C	10	10			1992 large certified air carrier enplaning
COMMUTER	C	7	7			1992 commuter enplaning
AIR_TAXI	C	7	7			1992 air taxi enplaning
FOREIGN	C	8	8			1992 foreign enplaning
IN_TRANSIT	C	10	10			1992 in-transit enplaning
HUB_SIZE	C	1	1			based on % of national enplanements
TOWER_TYPE	C	1	1			tower type code

All Polygonal Landmark Layers: *(al, pk) .pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Landmark name
FCC	C	3	3		F	Feature Class Code

All Polygonal Water Layers: *(mw, wp) .pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Landmark name
FCC	C	3	3		F	Feature Class Code

Postal Code Boundary: <*st*>xx0pcb.pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	ZIP or FSA name
ST_FIPS	C	2	2		F	State FIPS code
CTY_FIPS	C	3	3		F	County FIPS code
KEY	C	5	5		L	5 digit (ZIP) or 3 digit (FSA) postal code

Postal Code Boundary Regions: <*st*>xx0pcb.patpcb

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
PCB#	B	4	5			ArcInfo internal ID
PCB-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	ZIP or FSA name
ST_FIPS	C	2	2		F	State FIPS code
CTY_FIPS	C	3	3		F	County FIPS code
KEY	C	5	5		L	5 digit (ZIP) or 3 digit (FSA) postal code

County/CD Boundary:<*st*>xx0cyb.pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Full County or CD name
KEY	C	5	5		F	State FIPS code and County FIPS code

County/CD Boundary Regions: <*st*>xx0cyb.patcyb

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
CYB#	B	4	5			ArcInfo internal ID
CYB-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Full County or CD name
KEY	C	5	5		F	State FIPS code and County FIPS code

Place Boundary: <*st*>xx0plb.pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Full Place name
KEY	C	10	10		F	State, County FIPS, Place code code

Place Boundary Regions: <*st*>xx0plb.patplb

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
PLB#	B	4	5			ArcInfo internal ID
PLB-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Full Place name
KEY	C	10	10		F	State FIPS code and County FIPS code

State/Province Boundary: <*nt*>xx0stb.pat

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
<*cover*>#	B	4	5			ArcInfo internal ID
<*cover*>-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Full State or Province name
STATE	C	2	2		F	2- char State or Province abbr.
KEY	C	2	2		F	State FIPS or Province SGC code

State/Province Boundary Regions: <*nt*>xx0stb.patstb

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
STB#	B	4	5			ArcInfo internal ID
STB-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Full State or Province name
STATE	C	2	2		F	2- char State or Province abbr.
KEY	C	2	2		F	State FIPS or Province SGC code

Nation Boundary: woxx0ntb. patntb

Item Name	Type	Width	Output	Dec.	Justify	Description
AREA	F	8	18	5		ArcInfo Area (sq. dec.deg.)
PERIMETER	F	8	18	5		ArcInfo Perimeter (dec. deg.)
NTB#	B	4	5			ArcInfo internal ID
NTB-ID	B	4	5			ArcInfo user ID
NAME	C	40	40		L	Full Nation name
NATION	C	2	2		F	2- character Nation abbr.

ArcView Format 5

In This Section:

Introduction

Versions Supported

Dynamap / Routing 4.3 in Environmental Systems Research Institute (ESRI) ArcView format is designed for use with the following software version:

ArcView 3.1 or higher

Directories and Files

ArcView format Dynamap / Routing comes in a nationwide directory (USA) with state and county sub directories.

For a detailed explanation of the name correspondence files see the Auxiliary Files Section in this manual.

Each county and state (for state-tiled product) directory has 2 project files (.apr) – one for PC users and one for Unix users.

Each layer has shape files (.shp), dBASE data files (.dbf) and ArcView index files (.shx, .sbx, .sbn). Each county also has a network directory, if applicable.

Following is a chart showing ArcView format directories, files and layer identifiers.

State or Province-tiled data:

All World-tiled layers

nat

State Boundary and Inventory Files
dynaname.dbf (USA only)
cpyright.txt
datum.txt

st

Place Boundary & Inventory files
County Boundary & Inventory files
Postal Code Boundary & Inventory files
All other files tiled by State
genf<***stfips***>.txt
datum.txt
stxxxxpc.apr
stxxxxux.apr
\stcntyst.nws

County-tiled data:

nat

State Boundary and Inventory Files
dynaname.dbf (USA only)
cpyright.txt
datum.txt

st

Place Boundary & Inventory files
County Boundary & Inventory files
Postal Code Boundary & Inventory files
genf<***stfips***>.txt
datum.txt

stcnty

All County-tiled layers
datum.txt
stcntypc.apr
stcntyux.apr
\stxxxxst.nws

where: ***nat*** = 3-character ISO Nation abbr. (usa,can,arg,bra) ***st*** = 2-character State abbr.
cnty = 4-character County abbr. **x=** filler

ArcView Portable APRs

The .apr files will load all data files automatically as long as the .apr file remains in the same relative directory position to the data as shipped. If the .apr is moved to a different location, it will not be able to find the data and will prompt the user to locate all data.

For example, in the following state-tiled data directory structure, opening either the stxxxxpc.apr or stxxxxux.apr will properly automatically load all data files.

State or Province-tiled data:

nat
State Boundary and Inventory files
dynaname.dbf (USA only)
cpyright.txt
datum.txt
st
Place Boundary & Inventory files
County Boundary & Inventory files
Postal Code Boundary & Inventory files
All other files tiled by State
genf<***stfips***>.txt
datum.txt
stxxxxpc.apr
stxxxxux.apr

Alternate Names

Alternate names for streets are supplied in a correspondence file. Correspondence is established using the SEGMENT_ID.

Zoom Layering

Selected themes are displayed when the .apr file is opened. All other themes will display when zooming into the view.

Single County or State Display.

To view a single county coverage from within ArcView:

1. Begin an ArcView session
2. Select **Open Project**
3. Select the desired County Project (*.apr).

   The required data files are opened and the data is displayed using specified shapes and colors.

Multi-County or State Display

To view multi-county data sets:

1. Choose **Open Project** from the File menu.
2. Navigate to the appropriate directory and open the project file (*.apr) for the desired county.
3. Click on the top of the View screen and resize the window until the preceding screen is visible. Select the preceding window by clicking on the top of the display.
4. Choose **Import** from the Project menu. Scroll to Project (*.apr) in the “List Files of Type:” section. Select another county you wish to view and click OK.
5. Choose Open for the new view. Resize the present view until both views are displayed on the screen. Select all themes (or layers) you wish

to display in one coverage (hold the Shift key while clicking on appropriate themes). Choose **Copy Themes** from the Edit menu.

6. Select the view you wish to copy the themes to and choose Paste from the Edit menu.

All themes you selected should now be visible in one view.

Default Colors and Symbols

Theme (Lines)	Order	Abbr.	Symbol	Color
Highway	14	hy		
A1			Solid	Red
A2			Solid	Dk Blue
A3			Solid	Dk Green
A4			Solid	Dk Gray
A6			Solid	Red
Street	13	st	Solid	Dk Gray
Railroad	12	rr	Ticked	Dk Gray
Linear Water	11	lw	Solid	Lt Blue

Notes:
The draw order is reversed highest number to lowest with highest displayed on top.
Dxx in the “theme” columns represent the FCC designations. See the Appendix section for a list of FCC designations.

Theme(Points)	Order	Abbr.	Symbol	Color
Exit	24	ex		White
Placeholder	23	ph		Black
Recreation Area	22	ra		
D92 - Points of Interest				Blue
D81 - Golf Course				Dk Green
D64 - Amusement Park				Red
D67 - Stadium				Black
Transportation Terminal	21	tt		
D52 - Train Station				Dk Blue
D53 - Bus Terminal				Dk Green
D54 - Ferry Terminal				Blue
D56 - Subway/Metro Station				Dk Blue
Major Retail Center	20	rc		Dk Green
Institution	19	in		
D31 - Hospital				Blue
D43 - School				Dk Blue
D44 - Church				Dk Gray
D82 - Cemetery				Black
D65 - Government Facility				Black
Postal Code Inventory*	18	pci		Blue
County Inventory*	17	cyi		Red
Populated Locality Inventory*	16	pli		Black
State Inventory*	15	sti		Blue

Note: * These layers are included in the legend but not drawn.

Theme (Polygons)	Order	Abbr.	Fill Foreground	Outline Style	Outline Color
Airport	8	ap			
D58 - Airport			Lt Gray	*	*
D59 - Runway			Dk Gray	*	*
Large Area Landmarks	7	al			
D10 - Military			Lt Gray	*	*
D37 - Prison			Dk Gray	*	*
D43 - School			Lavender	*	*
D64 - Amusement Park			Lt Green	*	*
D65 - Government Facility			Dk Gray	*	*
D67 - Stadium			Lavender	*	*
D81 - Golf Course			Med Green	*	*
D82 - Cemetery			Lt Gray	*	*
Park	6	pk			
D83 - National Park			Dk Green	*	*
D85 - State Park			Lt Green	*	*
D89 - Local Park			Lt Green	*	*
Major Water	9	mw	Lt Blue	*	*
Water Polygon	10	wp	Lt Blue	*	*
Postal Code Boundary*	5	pcb	Transparent	Solid	Red
County Boundary	3	cyb	Lt Yellow	Solid	Dk Gray
Place Boundary	4	plb	Lt Orange	*	*
State Boundary	2	stb	Lt Yellow	Solid	Dk Gray
Nation Boundary	1	ntb	Lt Yellow	Solid	Dk Gray

Note: * These layers are included in the legend but not drawn.

Indexes

Spatial indexes are provided for all layers.

Record Layouts

Following are the record layouts of the data files for each county. The data in these files is accessed through the *stcnty*.apr project files or *stcnty*LL.shp shape files where LL indicates a given layer.

Notes:

Grey field(s) indicate format-specific internal fields
The Shape field is invisible in most views of the data.
Type: S= Shape; **C**= Character; **D**= Decimal
Index: Y= Yes, it is indexed; **N**= No, it is not indexed
Justify: L=Left; **R**=Right; **F**=Filled. Note that this only applies to character fields and only when they contain data (Ex: the ONE_WAY field contains either "TF", "FT", or is blank.)
Canadian equivalents in Description fields: State=**Province or Territory**; County=**CD**; FIPS=**SGC**; Place=**UA**

LINEAR LAYERS:

Highway: *hy.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	9	Y			Spatial information storage
SEGMENT_ID	D	10	N			Unique NorAm record number
PREFIX	C	2	N		L	Street prefix
NAME	C	40	N		L	Street name
TYPE	C	6	N		L	Street type
SUFFIX	C	2	N		L	Feature direction suffix
FCC	C	3	N		F	Feature Class Code
ACC	C	1	N		F	Artery Classification Code
SHIELD	C	1	N		F	"T", "I", "U", "S", "A", or blank
HWY_NUM	C	5	N		L	#, # with letter, or blank
SEG_LEN*	D	8	N	4		Segment length in miles
SPEED	D	3	N			Speed in miles per hour
ONE_WAY	C	2	N		F	One-way indicator
F_ZLEV	D	2	N			From node elevation
T_ZLEV	D	2	N			To node elevation
FT_COST	D	10	N	5		From-To impedance in minutes
TF_ COST	D	10	N	5		To-From impedance in minutes
FT_DIR	C	2	N		L	From-To Direction
TF_DIR	C	2	N		L	To-From Direction
NAME_FLAG	D	3	N	0		Name metadata flag

***** Aliased as miles in APR

Street: *st.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	9	Y			Spatial information storage
SEGMENT_ID	D	10	N			Unique NorAm record number
PREFIX	C	2	N		L	Street prefix
NAME	C	40	N		L	Street name
TYPE	C	6	N		L	Street type
SUFFIX	C	2	N		L	Feature direction suffix
FCC	C	3	N		F	Feature Class Code
ACC	C	1	N		F	Arterial Classification Code
SHIELD	C	1	N		F	"T", "I", "U", "S", "A", or blank
HWY_NUM	C	5	N		L	#, # with letter, or blank
SEG_LEN	D	8	N	4		Segment length in miles
SPEED	D	3	N			Speed in miles per hour
ONE_WAY	C	2	N		F	One-way indicator
F_ZLEV	D	2	N			From node elevation
T_ZLEV	D	2	N			To node elevation
FT_COST	D	10	N	5		From-To impedance in minutes
TF_ COST	D	10	N	5		To-From impedance in minutes
FT_DIR	C	2	N		L	From-To Direction
TF_DIR	C	2	N		L	To-From Direction
NAME_FLAG	D	3	N	0		Name metadata flag

Street Alternate name *sa.dbf

Item Name	Type	Width	Index	Dec.	Justify	Description
SEGMENT_ID	D	10	N			Unique NorAm record number
SEQUENCE	D	2	N			Sequence number*
PREFIX	C	2	N		L	Street prefix
NAME	C	40	N		L	Street name
TYPE	C	6	N		L	Street type
SUFFIX	C	2	N		L	Feature direction suffix
SHIELD	C	1	N		F	"T", "I", "U", "S", "A", or blank
HWY_NUM	C	5	N		R	#, # with letter, or blank
FT_DIR	C	2	N		L	From-To Direction
TF_DIR	C	2	N		L	To-From Direction
NAME_FLAG	D	3	N	0		Name metadata flag

Sequence number: This number represents the number of alternate names a segment has. It will start at 1 and increase to the number of the last alternate name. For example, if the segment has five alternate names then the sequence number will be 1-5 for that segment ID.

Street FIPS Information: *sf.dbf

Item Name	Type	Width	Index	Dec.	Justify	Description
DYNAMAP_ID	D	10	N		R	Unique record number
STATE00_L	C	2	N		L	2000 state FIPS left
STATE00_R	C	2	N		F	2000 state FIPS right
COUNTY00_L	C	3	N		F	2000 county FIPS left
COUNTY00_R	C	3	N		F	2000 county FIPS right
MCD00_L	C	5	N		F	2000 FIPS MCD/CCD left
MCD00_R	C	5	N		F	2000 FIPS MCD/CCD right
PLACE00_L	C	5	N		F	2000 FIPS Place left
PLACE00_R	C	5	N		F	2000 FIPS Place right

Toll: *tl.dbf

Item Name	Type	Width	Index	Dec.	Justify	Description
DYNAMAP_ID	D	10	N			Unique NorAm record number
TOLL	C	1	N		F	"Y" = toll

Turn Table: *tn.dbf

Item Name	Type	Width	Index	Dec.	Justify	Description
JUNCTION	D	11	N			Node ID number
F_EDGE	D	11	N			From-seg ID number
T_EDGE	D	11	N			To-seg ID number
AZIMUTH	D	12	N	3		Azimuth
ANGLE	D	12	N	3		Turn Angle
FROM_ID	D	11	N			From Segment_ID
TO_ID	D	11	N			To Segment _ID
COST	D	11	N			Always set to "-1"
MAN_ID	D	11	N			Unique Permanent Maneuver ID

Railroad: *rr.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	9	Y			Spatial information storage
DYNAMAP_ID	D	10	N			Unique NorAm record number
NAME	C	40	N		L	Railroad name
FCC	C	3	N		F	Feature Class Code

Linear Water: *lw.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	9	Y			Spatial information storage
DYNAMAP_ID	D	10	N			Unique NorAm record number
NAME	C	40	N		L	Water feature name
FCC	C	3	N		F	Feature Class Code

POINT LAYERS:

Maneuver: *mn.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	6	Y			Spatial information storage
MAN_ID	D	10	N		R	Unique Permanent Maneuver ID
SEQUENCE	D	2	N		F	Sequence # of maneuver record
MAN_TYPE	C	1	N		F	Maneuver Type
FROM_ID	D	10	N		R	From Segment _ID
FROMID_END	C	1	N		F	"T" or "F" indicating end of From_ID
ANGLE	D	10	N	2	R	Turn angle from From_ID to To_ID
COST	D	10	N	5	R	Restricted = "-1"
HOO	C	100	N		R	Hours of Operation (GDF)
TO_ID	D	10	N		R	To/Destination Segment _ID
VIA1	D	10	N		R	Via Segment _ID 1
VIA2	D	10	N		R	Via Segment _ID 2
VIA3	D	10	N		R	Via Segment _ID 3
VIA4	D	10	N		R	Via Segment _ID 4
VIA5	D	10	N		R	Via Segment _ID 5
LONGITUDE	D	15	N	6	R	6 decimals of precision, signed
LATITUDE	D	13	N	6	R	6 decimals of precision, signed

Exit: *ex.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	6	Y			Spatial information storage
EXIT_ID	D	10	N		R	Unique NorAm record number
FROM_NAME	C	40	N		L	Highway name exit leaves
EXIT	C	10	N		R	Number(s) if applicable
TO_NAME	C	40	N		L	Highway/street name exit accesses

All Point Landmark Layers: *(in, ra, rc, tt).*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	6	Y			Spatial information storage
NAME	C	40	N		L	Landmark name
FCC	C	3	N		F	Feature Class Code

Postal Code Inventory: <*st*>xx0pci.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	6	Y			Spatial information storage
POSTAL	C	5	N		L	5 digit (ZIP) or 3 digit (FSA) postal code
ENC_POSTAL	C	5	N			Enclosing ZIP or FSA
STATE	C	2	N			State 2-letter abbreviation
STFIPS	C	2	N			State FIPS
NAME	C	28	N		L	ZIP or FSA PO name
NAME_TYPE	C	30	N			Name Type
LASTL_FLAG	C	1	N			Lastline Flag
COUNTY1	C	20	N			Full County name 1
CTY1FIPS	C	3	N			County 1 FIPS
COUNTY2	C	20	N			Full County name 2
CTY2FIPS	C	3	N			County 2 FIPS
COUNTY3	C	20	N			Full County name 3
CTY3FIPS	C	3	N			County 3 FIPS
AREA_MI	D	10	N	3		Area in square miles
LATITUDE	D	13	N	6		Latitude
LONGITUDE	D	15	N	6		Longitude
RPO_FLAG	C	1	N			RPO Flag (“R” or blank)
PC_TYPE	C	20	N			Postal code type
PT_LOC	C	1	N			Point Location (“A” for actual)

Postal Code Alternate Name: <*st*>xx0pca.dbf

Item Name	Type	Width	Index	Dec.	Justify	Description
POSTAL	C	5	N		L	5 digit (ZIP) or 3 digit (FSA) postal code
NAME1	C	28	N		L	Alternate postal name 1
NAME_TYPE1	C	30	N		L	Alternate postal name type 1
NAME2	C	28	N		L	etc.
NAME_TYPE2	C	30	N		L	
NAME3	C	28	N		L	
NAME_TYPE3	C	30	N		L	
NAME4	C	28	N		L	
NAME_TYPE4	C	30	N		L	
NAME5	C	28	N		L	
NAME_TYPE5	C	30	N		L	

County/CD Inventory: <*st*>xx0cyi.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	6	Y			Spatial information storage
NAME	C	40	N		L	Full County or CD name
KEY	C	5	N		F	State FIPS code and County FIPS code

Populated Locality Inventory: <*st*>xx0pli.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	6	Y			Spatial information storage
NAME	C	40	N		L	Cleaned name
KEY	C	10	N		L	State, County FIPS, Place code
CAPITAL	C	1	N		F	"Y" = State Capital (+DC & PR)
POPULATION	D	10	N		R	Population (if available)

State/Province Inventory: <*nt*>xx0sti.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	6	Y			Spatial information storage
NAME	C	40	N		L	Full State or Province name
STATE	C	2	N		F	2- character State or Province
KEY	C	2	N		F	State FIPS or Province SGC code

POLYGON LAYERS:

Airport: *ap.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	8	Y			Spatial information storage
NAME	C	40	N		L	Airport name
FCC	C	3	N		F	Feature Class Code
LOC_ID	C	4	N		L	3 or 4 character identifier

Airport Information: *ai.dbf

Item Name	Type	Width	Dec.	Justify	Description
NAME	C	40		L	Airport name
FCC	C	3		F	Feature Class Code
LOC_ID	C	4		L	3 or 4 character identifier
USE	C	2			public (PU); private (PR)
OWNER	C	29			
ELEVATION	C	5			
CONGESTION	C	1			congestion level
SERVICE	C	2			service level
LG_CERT_AC	C	10			1992 large certified air carrier enplaning
COMMUTER	C	7			1992 commuter enplaning
AIR_TAXI	C	7			1992 air taxi enplaning
FOREIGN	C	8			1992 foreign enplaning
IN_TRANSIT	C	10			1992 in-transit enplaning
HUB_SIZE	C	1			based on % of national enplanements
TOWER_TYPE	C	1			tower type code

All Polygonal Landmark Layers: *(al,pk).*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	8	Y			Spatial information storage
NAME	C	40	N		L	Landmark name
FCC	C	3	N		F	Feature Class Code

All Polygonal Water Layers: *(mw, wp).*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	8	Y			Spatial information storage
NAME	C	40	N		L	Landmark name
FCC	C	3	N		F	Feature Class Code

Postal Code Boundary: <*st*>xx0pcb.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	8	Y			Spatial information storage
NAME	C	40	N		L	ZIP or FSA name
ST_FIPS	C	2	N		F	State FIPS code
CTY_FIPS	C	3	N		F	County FIPS code
KEY	C	5	N		L	Postal Code (ZIP or FSA)

County/CD Boundary: <*st*>xx0cyb.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	8	Y			Spatial information storage
NAME	C	40	N		L	Full County or CD name
KEY	C	5	N		F	State FIPS code and County FIPS

Place Boundary: <*st*>xx0plb.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	8	Y			Spatial information storage
NAME	C	40	N		L	Full Place name
KEY	C	10	N		L	State, County FIPS, Place code

State/Province Boundary: <nt>xx0stb.*

Item Name	Type	Width	Index	Dec.	Justify	Description
SHAPE	S	8	Y			Spatial information storage
NAME	C	40	N		L	Full State or Province name
STATE	C	2	N		F	2- character State or Province
KEY	C	2	N		F	State FIPS or Province SGC code

Nation Boundary: woxx0ntb. Patntb

Item Name	Type	Width	Dec.	Justify	Description
SHAPE	S	8			Spatial information storage
NAME	C	40		L	Full Nation name
NATION	C	2		F	2 character Nation abbr.

ASCII Format 6

In This Section:

Introduction

GDT's ASCII format is based on the TIGER format developed by the U.S. Census Bureau. See the Primary Layers portion of this section for a description of the ASCII format.

Directories and Files

State or Province-tiled data:

\
Nation Boundary Mid/Mif files
datum.txt
cpyright.txt
nat
State Boundary and Inventory files
dynaname.txx (USA only)
datum.txt
st
All files available by State
Place Boundary and Inventory files
County Boundary and Inventory files
Postal Code Boundary and Inventory files
datum.txt
genf<***stfips***>.txt

County-tiled data: (USA only)

\
Nation Boundary Mid/Mif files
datum.txt
cpyright.txt
nat
State Boundary and Inventory files
dynaname.dxx
datum.txt
st
Place Boundary and Inventory files
County Boundary and Inventory files
Postal Code Boundary and Inventory files
datum.txt
genf<stfips>.txt
stcnty
All files available by County
datum.txt

where: ***nat*** = 3-character ISO Nation abbr. (usa,can,arg,bra) ***st*** = 2-character State abbr.
cnty = 4-character County abbr. **x=** filler
stfips = 2-digit State FIPS

File Naming

County and State Tiled Layers (Tile= "C,S")

County-tiled data:
stcntyll.dx#
State-tiled data;
stxxxxll.dx#

st	State 2-character abbreviation
cnty	County 4-character abbreviation
ll	Layer abbreviation
d	Delimiter
	l LF
	t CRLF
	x None
x	filler
#	File Type Number or Indicator
	1 GDT Record Type 1
	2 Record Type 2
	3 GDT Record Type 3
	4 GDT Record Type 4
	5 Record Type 5
	7 Record Type 7
	8 Record Type 8
	a Record Type A
	i Record Type I
	x other
	b Highways Basic Segment File
	s Highways Shape File
	n Highways Name File

State-tiled only Layers

stxx#lll.dvn

st	State FIPS Code
xx	filler
#	Generalization (0-3, where 0 = no generalization)
lll	Layer abbreviation
d	Delimiter
	l LF
	t CRLF
	x None
vn	Version Number

Primary Layers

Record ID

With the following exceptions, all Primary layer records have identification codes (IDs) that are unique nationwide.

State border segments are duplicated in the two neighboring states (state tiling).

County border segments are duplicated in two neighboring counties (county tiling).

Landmark layer and Major Water polygons records have their own separate IDs unless regionalized.

Record Types

Linear features and polygon features may contain Type 1 and Type 2 records:

Type 1: Segments **Type 2:** Shape list

Type 4 records contain alternate name pointers which are a link between Type 1 and Type 5 records.

Dynamap / Routing includes only the *alternate* feature names in Type 5 Records. This eliminates some duplication, results in a smaller file size and should have no adverse affects on algorithms searching for alternate feature names. To generate a unique list of feature names in a county, however, the user must scan through both Record Type 1 and Record Type 5.

Records Type 2, 4, or 5 may or may not be present depending on the county.

Parks and Large Area Landmarks are polygon layers and contain the **Type 1, Type 2, Type 7, Type 8, Type A and Type I** Records. Recreational Areas, Transportation Terminals, Institutions and Major

Retail Centers are point files and consist of **Type 7 Records**.

The Airports layer has a separate Airport information (GDT Type AIR) file and records of six types:

Type 1:	Segments	**Type 8:**	Polygons
Type 2:	Shape list	**Type I:**	Polygons
Type A:	Alternate poly info	**Type 7:**	Polygon names

Record Type Relationships

Record Types 1, 2, 4 and I are linked by use of the SEGMENT_ID field. Type 2 and 4 records that have the same SEGMENT_ID as found in a Record Type 1 record represent corresponding information for that segment. Some Type 1 records have more than one corresponding record in the Type 2 and / or Type 4 file.

GDT TYPE 1 RECORDS contain street or line segments defined by “from” and “to” nodes.

The Street layer will contain GDT Record Type 1 files, if information is present for that file. This is a GDT file format, different from the standard TIGER Type 1 file, but similar in usage. The Highway layer also uses this same GDT Type 1 file. Other layers requiring a Type 1 file will use the TIGER style Type 1 layout as detailed in Record Layouts later in this section.

TYPE 2 RECORDS with the same SEGMENT_ID as found in Record Type 1 are shape coordinates for line segments defined in Record Type 1. There may be many Type 2 records for a single Type 1 record. A single shape record contains coordinates for up to 10 shape points for a segment record. If additional shape points are needed to describe a line, as many more Type 2 records are used as are needed. If a shape record has less than 10 shape points the unused coordinate value fields are filled out with zeros. Since it is imperative to apply the coordinate information in Type 2 records in sequence order, each is given a Record Sequence Number (RTSQ). The first coordinate for the segment is the "from" node (Record

Type 1), followed by shape point 1, shape point 2, etc., ending with the "to" node (Record Type 1).

NOTES:

The shape list is a series of latitude/longitude coordinate values that add form to a straight line. Shape records are not included for every line segment and line segments may refer to several shape records. Shape records are not required to show segments on a map display, but they add identity to features. Generally the exclusion of shape records in a display speeds up the drawing time at the expense of a less visually pleasing and precise map.

If you draw without shapes you may get crossing lines.

Coordinate values have six implied decimal places and are preceded with a "+" for latitude and "–" for longitude. The unused numeric field at the beginning of a longitude value is blank.

GDT TYPE 4 RECORDS list alternate name pointers for each SEGMENT_ID from the Record Type 1 file(s). Any matching Type 4 record found contains an alternate feature number and a sequence number (RTSQ). Additional records may be present indicated by the same SEGMENT_ID number and a different sequence number.

The feature numbers listed in this file are for finding the additional names for the segment. The name appearing in Record Type 1 is the Primary Routing Name, that name most suitable for routing based on GDT's naming hierarchy; any other feature names for a segment will be in the alternate name list. A line segment may have more than one name and also more than one alternate name. For example: Record Type 1 may have the name "MAIN ST" as the primary name for a segment and may also point to alternates listed in Record Type 4. Two Record Type 4 records list two alternate feature numbers for that segment. The names matching those feature numbers are found in Record Type 5, "4TH ST" and "ST HWY 101". There may be one alternate, many alternates or none. If a zero is listed as an alternate feature number, the number should be ignored. This is a GDT file format, different from the standard TIGER Type 4 file, but similar in usage.

TYPE 5 RECORDS list alternate names. Primary names appear in Record Type 1 while names for any feature

numbers listed in Record Type 4 are found in Record Type 5. The NAME_ID from Record Type 4 is used to find a record in Record Type 5 that has the same NAME_ID. Once found, that record contains the direction prefix, alternate name, street type and direction suffix.

NOTES:
There is an important difference between TIGER and GDT format in the Alternate Feature Name List. TIGER lists all the unique feature names for a county in Record Type 5. Dynamap lists only those feature names that appear in the Alternate Feature Name Index.

TYPE 7 RECORDS (Water Polygons, Major Water, Airports, Parks, Recreational Areas, Transportation Terminals, Institutions, Major Retail Centers and Large Area Landmarks layers) contain point landmark features and area landmark names. If a county file has no landmarks and no airport information, it will not have a Record Type 7.

NOTES:
Coordinate values are filled for point landmarks only. Area landmark coordinates are defined by Type 1 and Type 2 records. Coordinate values have implied six decimal places and are preceded with a "+" for latitude and "–" for longitude. The unused numeric field at the beginning of a longitude value is blank.

TYPE 8 RECORDS (Water Polygons, Major Water, Airports, Parks and Large Area Landmarks layers) contain polygon IDs and feature name links. Each large area landmark, all water, major water, airport boundary or runway that is a complete polygon is assigned a unique ID in the Type 8 file.

Note that polygons such as Major Water and Large Area Landmarks may be regionalized with more than one polygon containing the same ID.

TYPE A RECORDS (Water Polygons, Major Water, Airports, Parks and Large Area Landmarks layers) contain alternate polygon information. All fields below POLYID are blank filled.

TYPE I RECORDS (Water Polygons, Major Water, Airports, Parks and Large Area Landmarks layers) contain segment record numbers that make up

landmark boundary and landmark polygons. These segments and their shape points are found in Record Type 1 and Type 2 files.

TURN RESTRICTIONS FILE contains segment pairs. A turn is broken down into the two segments that represent the turn. A turn is made from one segment to another segment. In GDT format, each turn restriction requires two Segment_IDs. One is the "FROM" segment; the other is the "TO" segment. More complex restrictions are modeled in the maneuver file.

AIRPORT INFORMATION FILE contains the following information:

LARGE CERTIFIED AIR CARRIER ENPLANEMENT

Total U.S. and international enplanements on large certificate U.S. air carriers calendar year 1994. A large certified air carrier is a carrier holding a certificate issued under Section 401 of the Federal Aviation Act of 1958 and that operates aircraft designed to have a maximum passenger seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds or that conduct international operations.

COMMUTER ENPLANEMENT

Total enplanements by small certified air carriers during calendar year 1994 operating scheduled service. Scheduled service provides five or more round trips per week between two or more points, with flight schedules published which specify the times, days of the week and points between which such flights are performed. Small certified air carriers are those air carriers providing scheduled service as defined above and that operate aircraft whose payload capacity is less than 18,000 pounds and have a maximum seating capacity less than 60 seats. Some of these air carriers may also provide on-demand taxi service.

AIR TAXI ENPLANEMENTS

Total enplanements on air taxis during calendar year 1994. Air taxi flights are any on-demand flights by aircraft with a gross take-off weight of 6,000 pounds or more. While these flights will usually be provided by taxi air carriers,

some of these flights may be provided by small certified air carriers.

FOREIGN FLAG AIR CARRIER ENPLANEMENTS

Total enplanements by foreign flag air carriers during calendar year 1994. This data has been sanitized to exclude those airports where the number of foreign flag carriers providing service was less than three. At these airports, the number of foreign enplanements was added to the number of large certified air carrier enplanements.

IN-TRANSIT ENPLANEMENTS

Passengers onboard international flights which transit an airport for purposes other than boarding and deplaning passengers, limited to airports in the 48 contiguous states. This data has been sanitized to exclude those airports where the total number of carriers transiting was less than three and at least one of the carriers transiting was foreign. At these airports, the number of in-transit enplanements was added to the number of large certified air carrier enplanement.

TOTAL ENPLANEMENTS

Total enplanements during calendar year 1994 (the sum of large certified, commuter, air taxi, foreign and in-transit enplanements).

HUB SIZE

Categorization for commercial service airports according to the percentage of the total national enplanements for which they account. Large hubs are airports with one percent or more of the national enplanements. Medium hubs are airports with 0.25 to one percent of the national enplanements. Small hubs are airports with 0.05 to 0.25 percent of the national enplanements. Non-hubs are airports with less than 0.05 percent of the national enplanements. General aviation are airports that are not commercial service airports.

L - Large

M - Medium

S - Small

N - Non-hub

G - General Aviation

TOWER TYPE

0 - No tower

1 - Tracon, Rapcon, Cerap

2 - Radar tower

3 - Limited radar tower

4 - Non-radar tower

5 - VFR tower

6 - Non-FAA facility

7 - Contract tower

Dynaname File

The Dynaname file is a NEW version of GDT's FIPS to alpha to full name correspondence file. The only modification is to accommodate the new naming methodology for counties with less than 4 characters. These county names will be buffered to 4 places with "_" (underscore) characters. Example: Bay County, Florida WAS "flbay*.*" and is NOW "flbay_*.*"

Field Terms

RT - a one character field to show Record type.

VERSION - four character internal GDT code representing year and month of database currency.

RECNUM - GDT unique record number. Landmark layer records have their own unique nationwide identification codes. Because of this there may be Landmark layer records with the same IDs as records from other layers.

RTSQ - Record Sequence Number field used when a segment has more than one Record Type 2 or 4. For example, there is an additional Record Type 2 (RTSQ 2) if a segment has more than ten shape points. If it has more than 20 shape points another Record Type 2 (RTSQ 3) is required. An additional Record Type 4 (RTSQ 2) is required if a segment has more than 5 alternate names. There may be as many additional

Records as a segment requires identified in order by the Record Sequence Number.

OTHER FIELD TERMS - For additional field term explanations see the Record Type Descriptions in the File Content section.

Additional Layers

Highways

Dynamap / Highways in GDT format consists of a single combined layer for each county (or state).

Postal Codes

The postal code layer includes a DIME (ASCII) Boundary file and an ASCII format Inventory file.

Each DIME format **ZIP Boundary file** record represents one straight line segment with a logical record length of 60 characters plus delimiter.

Areas outside of file coverage and major water features within file coverage are coded State FIPS, County "000" and ZIP "00000".

State, County, Place Layers

In these layers each DIME format **boundary file** record represents one straight line segment with a logical record length of 64 characters plus delimiter.

Areas outside of coverage and water features in nationwide files are: state code 00, county code 000; in state files State code is <FIPS>, County 000. Longitude and latitude have 6 implied decimal places. For example: 33125684 = 33.125684.

ASCII format **Inventory files** provide additional information about boundary file polygons such as names, census area codes, area in square miles and

centroid position. The record length is 80 characters plus delimiter.

Polygons with area calculations of less than or equal to 1/1000 square miles have been assigned "0.001".

Centroid latitude and longitude are signed with an implied six decimals of precision.

Centroid location is always within the boundary of a polygon, even in horseshoe shaped polygons where the balance point is outside of the polygon. Centroids for multiple polygon features are at the center of the largest polygon.

Auxiliary Files

The following auxiliary files are included:

dynaname.txx	Name Correspondence file. (USA only)
cpyright.txt	Copyright file
datum.txt	Datum specification file
genf<stfips>.txt	Geographic Entity Name File

Record Layouts

NOTE:

Depending on your operating system, your files may not have carriage return/line feeds. For example, UNIX users will have only line feeds. Check your File Listing for the delimiter that is used for your operating system.

Type: **C** = character
Justify: **l** = left, **r** = right and **f** = filled
Fill: **sp** = space and **zero** = 0

ASCII files in this product end with a carriage return/line feed
Canadian equivalents in Description fields: State=**Province or Territory**; County=**CD**; FIPS=**SGC**; Place=**UA**

GDT Record Type 1: Primary Data Record, *.tx1 (for street and highways layers)

Field	Size	Type	Justify	Fill	Description
RT	1	C	f		Record Type (Value "1")
VERSION	4	C	f		GDT Internal Version Number
SEGMENT_ID	10	C	r	sp	GDT Record Number
FEDIRP	2	C	l	sp	Feature Direction, Prefix
FENAME	30	C	l	sp	Feature Name
FETYP	6	C	l	sp	Feature Type
FEDIRS	2	C	l	sp	Feature Direction Suffix
FCC	3	C	f	sp	Feature Class Code
FRLONG	10	C	r	sp	Longitude From (leading –, implied 6 decimal places)
FRLAT	9	C	r	sp	Latitude From (leading +, implied 6 decimal places)
TOLONG	10	C	r	sp	Longitude To (leading –, implied 6 decimal places)
TOLAT	9	C	r	sp	Latitude To (leading +, implied 6 decimal places)
ACC	1	C	f	sp	Artery Classification Code (“1”, “2”, “3”, “4")
SHIELD	1	C	f	sp	“T”, “I”, “U”, “S”, “A”, or blank
HWY_NUM	5	C	l	sp	#, # with letter, or blank (if SHIELD_TYPE is filled)
LENGTH	8	C	r	sp	seg length in miles, (implied 4 decimal places)
SPEED	3	C	r	sp	speed in mph (US)
ONE_WAY	2	C	f	sp	"FT", "TF", or ""
F_ZLEV	2	C	r	sp	functional From segment-end elevation
T_ZLEV	2	C	r	sp	functional To segment-end elevation
FT_COST	8	C	r	zero	from-to travel time (minutes, implied 5 decimal places)
TF_COST	8	C	r	zero	to-from travel time (minutes, implied 5 decimal places)
FT_DIR	2	C	l	sp	From-To direction
TF_DIR	2	C	l	sp	To_From direction
NAME_FLAG	3	C	r	sp	Name metadata flag

Record Type 1: Primary Data Record, *.tx1 (for layers other than streets and highways)

Field	Size	Type	Justify	Fill	Description
RT	1	C	f		Record Type (Value "1")
VERSION	4	C	f		GDT Version Number*
RECNUM	10	C	r	sp	GDT Record Number
SIDE1	1	C	f	sp	Single Side Segment Code**
SOURCE	1	C	f	sp	Source Code***
FEDIRP	2	C	l	sp	Feature Direction, Prefix
FENAME	30	C	l	sp	Feature Name
FETYP	4	C	l	sp	Feature Type
FEDIRS	2	C	l	sp	Feature Direction Suffix
FCC	3	C	f	sp	Feature Class Code
FRADDL	11	C	r	sp	From Address Left
TOADDL	11	C	r	sp	To Address Left
FRADDR	11	C	r	sp	From Address Right
TOADDR	11	C	r	sp	To Address Right
FRIADDFL	1	C	f	sp	From Imputed Address Flag Left****
TOIADDFL	1	C	f	sp	To Imputed Address Flag Left****
FRIADDFR	1	C	f	sp	From Imputed Address Flag Right****
TOIADDFR	1	C	f	sp	To Imputed Address Flag Right****
ZIPL	5	C	f	sp	ZIP Code Left
ZIPR	5	C	f	sp	ZIP Code Right

* Four character internal GDT code representing year and month of database currency..

** Blank if no data. Value of "1" indicates that data exists for only one side of the segment (usually a county boundary).

*** A series of codes that specify the original digital source of the line segment. For example: Census Bureau 1980 GBF/DIME file or a USGS 1:100,000-scale DLG-3 file (see Appendix A).

**** Blank if no data. Value of "1" indicates an imputed address range (see Explanation of Field Terms above).

Record Type 1 table continued on following page

Record Type 1:Primary Data Record, *.tx1 (continued – for layers other than streets and highways)

Field	Size	Type	Justify	Fill	Description
FAIRL*	5	C	f	sp	FIPS PUB 55 Code Left American Indian reservation (AIR), Alaska Native Village Statistical Area (ANVSA), Tribal Jurisdiction Statistical Area (TJSA), Tribal Designated Statistical Area (TDSA)
FAIRR*	5	C	f	sp	FIPS PUB 55 Code Right American Indian reservation (AIR), Alaska Native Village Statistical Area (ANVSA), Tribal Jurisdiction Statistical Area (TJSA), Tribal Designated Statistical Area (TDSA)
ANRCL*	2	C	f	sp	Alaska Native Regional Corporation Code Left
ANRCR*	2	C	f	sp	Alaska Native Regional Corporation Code Right
STATEL	2	C	f	sp	FIPS State Code Left
STATER	2	C	f	sp	FIPS State Code Right
COUNTYL	3	C	f	sp	FIPS County Code Left
COUNTYR	3	C	f	sp	FIPS County Code Right
FMCDL	5	C	f	sp	FIPS PUB 55 Code Left (MCD/CCD)
FMCDR	5	C	f	sp	FIPS PUB 55 Code Right (MCD/CCD)
FSMCDL	5	C	f	sp	FIPS PUB 55 Code Left (SUB-MCD)
FSMCDR	5	C	f	sp	FIPS PUB 55 Code Right (SUB-MCD)
FPLL	5	C	f	sp	FIPS PUB 55 Code Left (PLACE)
FPLR	5	C	f	sp	FIPS PUB 55 Code Right (PLACE)
CTBNAL	6	C	f	sp	Census Tract Code Left of four digits (implied 2 decimal places) and 2-digit suffix. If suffix is absent it will be zero filled.
CTBNAR	6	C	f	sp	Census Tract Code Right of four digits (implied 2 decimal places) and 2-digit suffix. If suffix is absent it will be zero filled.
BLKL	4	C	f	sp	Tabulation Block Number Left of 4 digits
BLKR	4	C	f	sp	Tabulation Block Number Right of 4 digits
FRLONG	10	C	r	sp	Longitude From (leading –, implied 6 decimal places)
FRLAT	9	C	r	sp	Latitude From (leading +, implied 6 decimal places)
TOLONG	10	C	r	sp	Longitude To (leading –, implied 6 decimal places)
TOLAT	9	C	r	sp	Latitude To (leading +, implied 6 decimal places)

NOTE:

The CTBNAL and CTBNAR fields consist of a basic tract code of 4 digits with implied 2 decimal places followed by a 2 digit suffix.

* FAIRL, FAIRR, ANRCL, ANRCR fields are always blank.

Record Type 2: Shape Coordinate List, *.tx2

Field	Size	Type	Justify	Fill	Description
RT	1	C	f		Record Type (value "2")
VERSION	4	C	f		GDT Version Number
SEGMENT_ID	10	C	r	sp	GDT Record Number
RTSQ	3	C	r	sp	Record Sequence Number
LONG1	10	C	r	sp	Point 1, Longitude (-)
LAT1	9	C	r	sp	Point 1, Latitude (+)
LONG2	10	C	r	sp	Point 2, Longitude (-)
LAT2	9	C	r	sp	Point 2, Latitude (+)
			ETC.		
LONG10	10	C	r	sp	Point 10, Longitude (-)
LAT10	9	C	f	sp	Point 10, Latitude (+)

GDT Record Type 4: Alternate feature name index, *.tx4

Field	Size	Type	Justify	Fill	Description
RT	1	C	f		Record Type (value "4")
VERSION	4	C	f		GDT Version Number
SEGMENT_ID	10	C	r	sp	GDT nationwide unique segment ID
RTSQ	3	C	r	sp	Record Sequence Number
NAME_ID	8	C	r	sp	Alternate Feature Name ID
SHIELD_TYPE	1	C	f	sp	"T", "I", "U", "S", "A", or blank
HWY_NUM	5	C	r	sp	#, # with letter, or blank
FT_DIR	2	C	l	sp	From-to direction
TF_DIR	2	C	l	sp	To-from direction
NAME_FLAG	3	C	r	sp	Name metadata flag

Record Type 5: Alternate feature name list*.tx5

Field	Size	Type	Justify	Fill	Description
RT	1	C	f		Record Type (value "5")
STATE	2	C	f	zero	FIPS State Code for File
COUNTY	3	C	f	zero	FIPS County Code for File
NAME_ID	8	C	r	sp	Alternate Feature Name ID
FEDIRP	2	C	l	sp	Feature Direction, Prefix
FENAME	30	C	l	sp	Feature Name
FETYP	6	C	l	sp	Street Type
FEDIRS	2	C	l	sp	Feature Direction, Suffix

Exit File: *ex.txx

Field	Size	Type	Justify	Fill	Description
STATE	2	C	f	sp	state FIPS code
COUNTY	3	C	f	sp	county FIPS code
EXIT ID	10	C	r	sp	GDT nationwide unique exit ID
FROM NAME	40	C	l	sp	highway name exit leaves
EXIT NUMBER	10	C	r	sp	number if applicable
TO NAME	40	C	l	sp	highway/street name exit accesses
LONGITUDE	10	C	r	sp	longitude (implied 6 decimal degrees)
LATITUDE	9	C	r	sp	latitude (implied 6 decimal degrees)

Turn Restrictions File: *tn.txx

Field	Size	Type	Justify	Fill	Description
ANGLE	12	C	r	sp	Implied 3 decimal places
FROM_ID	10	C	r	sp	SEGMENT_ ID for first segment
TO_ID	10	C	r	sp	SEGMENT_ ID for second segment
COST	8	C	r	sp	"-0100000" if turn is restricted
MAN_ID	10	C	r	sp	Unique Permanent Maneuver ID
LONGITUDE	10	C	r	sp	Longitude (implied 6 decimal places)
LATITUDE	9	C	r	sp	Latitude (implied 6 decimal places)

Maneuver: *mn.txx

Field	Size	Type	Justify	Fill	Description
MAN_ID	10	D	r	sp	Unique Permanent Maneuver ID
SEQUENCE	1	D	f	sp	Sequence # of maneuver record
MAN_TYPE	1	C	f	sp	Maneuver Type "P"= Prohibited
FROM_ID	10	D	r	sp	From Dynamap_ID
FROMID_END	1	C	f	sp	"T" or "F" indicating end of From_ID
ANGLE	6	D	r	sp	Turn angle from From_ID to To_ID
COST	8	D	r	sp	Restricted = "-0100000"
HOO	100	C	r	sp	Hours of Operation (GDF)
TO_ID	10	D	r	sp	To/Destination Dynamap_ID
VIA1	10	D	r	sp	Via SEGMENT_ ID 1
VIA2	10	D	r	sp	Via SEGMENT_ ID 2
VIA3	10	D	r	sp	Via SEGMENT_ ID 3
VIA4	10	D	r	sp	Via SEGMENT_ ID 4
VIA5	10	D	r	sp	Via SEGMENT_ ID 5
LONGITUDE	11	D	r	sp	Longitude
LATITUDE	10	D	f	sp	Latitude

Street FIPS Information: *sf.txx

Field	Size	Type	Justify	Fill	Description
DYNAMAP_ ID	10	C	r	sp	GDT nationwide unique segment ID
STATE00_L	2	C	l		2000 state FIPS left
STATE00_R	2	C	f		2000 state FIPS right
COUNTY00_L	3	C	f		2000 county FIPS left
COUNTY00_R	3	C	r		2000 county FIPS right
MCD00_L	5	C	f		2000 FIPS MCD/CCD left
MCD00_R	5	C	f		2000 FIPS MCD/CCD right
PLACE00_L	5	C	f	sp	2000 FIPS Place left
PLACE00_R	5	C	f		2000 FIPS Place right

Toll File: *tl.txx

Field	Size	Type	Justify	Fill	Description
SEGMENT_ID	10	C	r	sp	Segment ID for first segment
TOLL	1	C	f	sp	"Y" = toll

Airport Information: *ap.air

Field	Size	Type	Justify	Fill	Description
NAME	42	C			facility name
FCC	3	C			Feature Class Code
LOC_ID	4	C			3 or 4 character identifier
USE	2	C			public (PU); private (PR)
OWNER	29	C			
ELEVATION	5	C			
CONGESTION	1	C			congestion level
SERVICE	2	C			service level
LG_CERT_AC	10	C			1992 large certified air carrier enplaning
COMMUTER	7	C			1992 commuter enplaning
AIR_TAXI	7	C			1992 air taxi enplaning
FOREIGN	8	C			1992 foreign enplaning
IN_TRANSIT	10	C			1992 in-transit enplaning
HUB_SIZE	1	C			based on % of national enplanements
TOWER_TYPE	1	C			tower type code

Note: <vn> = version number

Postal Code Boundary File (DIME format): <st>xx0pcb.t<vn>

Field	Size	Type	Justify	Fill	Description
LEFT STATE	2	C	r	zero	Left State FIPS code
LEFT COUNTY	3	C	r	zero	Left County FIPS code
LEFT POSTAL CODE	5	C	r	zero	Left Postal Code (ZIP or FSA)
BLANKS	3	C		sp	
RIGHT STATE	2	C	r	zero	Right State FIPS code
RIGHT COUNTY	3	C	r	zero	Right County FIPS code
RIGHT POSTAL CODE	5	C	r	zero	Right Postal Code (ZIP or FSA)
BLANKS	3	C		sp	
FROM LATITUDE	8	C	r	sp	From latitude value, 6 dec. deg. precision
FROM LONGITUDE	9	C	r	sp	From longitude value, 6 dec. deg. precision
TO LATITUDE	8	C	r	sp	To latitude value, 6 dec. deg. precision
TO LONGITUDE	9	C	r	sp	To longitude value, 6 dec. deg. precision

Postal Code Inventory File - U.S. : <st>xx0pci.t<vn>

Field	Size	Type	Justify	Fill	Description
STATE	2	C			State FIPS
POSTAL	5	C	l		5 digit (ZIP) postal code
ENC_POSTAL	5	C			Enclosing ZIP or FSA
AREA_MI	9	C			Area in square miles (implied 3 decimal degrees)
GEOLAT	8	C			Geometry-based Latitude (implied 6 decimal degrees)
GEOLON	9	C			Geometry-based Longitude (implied 6 decimal degrees)
DELLAT	8	C			Delivery-based Latitude (implied 6 decimal degrees)
DELLON	9	C			Delivery-based Longitude (implied 6 decimal degrees)
NAME	28	C	l		ZIP or FSA name
PC_TYPE	1	C			Postal code type
NAME_TYPE	1	C			Name Type
CTY1FIPS	3	C			County 1 FIPS
CTY2FIPS	3	C			County 2 FIPS
CTY3FIPS	3	C			County 3 FIPS
RPO_FLAG	1	C			RPO Flag (“R” or blank)
LASTL_FLAG	1	C			Lastline Flag
PT_LOC	1	C			Point Location (“A” for actual)
BLANKS	3	C			Blanks

Postal Code Inventory File - Canada : <st>xx0pci.t<vn>

Field	Size	Type	Justify	Fill	Description
STATE	2	C			State FIPS
POSTAL	5	C	l		5 digit (ZIP) postal code
ENC_POSTAL	5	C			Enclosing ZIP or FSA
AREA_MI	10	C			Area in square miles (implied 3 decimal degrees)
GEOLAT	8	C			Geometry-based Latitude (implied 6 decimal degrees)
GEOLON	9	C			Geometry-based Longitude (implied 6 decimal degrees)
DELLAT	8	C			Delivery-based Latitude (implied 6 decimal degrees)
DELLON	9	C			Delivery-based Longitude (implied 6 decimal degrees)
NAME	28	C	l		ZIP or FSA name
PC_TYPE	1	C			Postal code type
NAME_TYPE	1	C			Name Type
CTY1FIPS	3	C			County 1 FIPS
CTY2FIPS	3	C			County 2 FIPS
CTY3FIPS	3	C			County 3 FIPS
RPO_FLAG	1	C			RPO Flag (“R” or blank)
LASTL_FLAG	1	C			Lastline Flag
PT_LOC	1	C			Point Location (“A” for actual)
BLANKS	2	C			Blanks

Place Boundary File (DIME format): <st>xx0plb.t<vn>

Field	Size	Type	Justify	Fill	Description
LEFT STATE	2	C	r	zero	Left State FIPS code
LEFT COUNTY	3	C	r	zero	Left County FIPS code
LEFT PLACE CODE	5	C	r	zero	Left Place 1990 Code
BLANKS	5	C		sp	
RIGHT STATE	2	C	r	zero	Right State FIPS code
RIGHT COUNTY	3	C	r	zero	Right County FIPS code
RIGHT PLACE CODE	5	C	r	zero	Right Place Code
BLANKS	5	C		sp	
FROM LATITUDE	8	C	r	sp	From latitude value (implied 6 decimal degrees)
FROM LONGITUDE	9	C	r	sp	From longitude value (implied 6 decimal degrees)
TO LATITUDE	8	C	r	sp	To latitude value (implied 6 decimal degrees)
TO LONGITUDE	9	C	r	sp	To longitude value (implied 6 decimal degrees)

Populated Locality Inventory File: <st>xx0pli.t<vn>

Field	Size	Type	Justify	Fill	Description
NAME	40	C	l		Cleaned name
KEY	10	C	l	sp	State, County FIPS, Place code
CAPITAL	1	C	f	sp	"Y" = State Capital (inc. DC & PR), "N" not.
POPULATION	10	C	r	sp	Population (if applicable)
LONGITUDE	10	C	r	sp	Longitude (leading - implied 6 decimal places)
LATITUDE	9	C	f		Latitude (leading + implied 6 decimal places)

County Dime File Record Layout: <st>xx0cyb.t<vn>

Field	Size	Type	Justify	Fill	Description
LEFT STATE FIPS CODE	2				State FIPS/Province SGC code Left
LEFT COUNTY FIPS CODE	3				County FIPS/CD SGC code Left
BLANKS	10				
RIGHT STATE FIPS CODE	2				State FIPS/Province SGC code Right
RIGHT COUNTY FIPS CODE	3				County FIPS/CD SGC code Right
BLANKS	10				
FROM LATITUDE	8				Unsigned, implied 6 places
FROM LONGITUDE	9				Unsigned, implied 6 places
TO LATITUDE	8				Unsigned, implied 6 places
TO LONGITUDE	9				Unsigned, implied 6 places

County Inventory File Record Layout: <st>xx0cyi.t<vn>

Field	Size	Type	Justify	Fill	Description
STATE FIPS CODE	2				State FIPS/Province SGC code
COUNTY FIPS CODE	3				County FIPS/CD SGC code
BLANKS	13				
STATE ABBREVIATION	2				State /Province alpha abb.
COUNTY NAME	28				Full County/CD Name
AREA CALCULATION	11				decimal point in position 56
BLANK	1				
CENTROID LATITUDE	9				Unsigned decimal point in position 63
CENTROID LONGITUDE	11				signed, decimal in position 74

State Dime File Record Layout: <nt>xx0stb.t<vn>

Field	Size	Type	Justify	Fill	Description
LEFT STATE FIPS CODE	2				State FIPS/Province SGC code Left
BLANKS	13				
RIGHT STATE FIPS CODE	2				State FIPS/Province SGC code Right
BLANKS	13				
FROM LATITUDE	8				Latitude (implied 6 decimal degrees) unsigned
FROM LONGITUDE	9				Longitude (implied 6 decimal degrees) unsigned
TO LATITUDE	8				Latitude (implied 6 decimal degrees) unsigned
TO LONGITUDE	9				Longitude (implied 6 decimal degrees) unsigned

State Inventory File Record Layout: <nt>xx0sti.t<vn>

Field	Size	Type	Justify	Fill	Description
STATE FIPS CODE	2				State FIPS/Province SGC code
BLANKS	16				
STATE ABBREVIATION	2				State/province alpha abb.
STATE NAME	28				
AREA CALCULATION	11				Decimal point in position 56
BLANK	1				
CENTROID LATITUDE	9				Unsigned decimal point in position 63
CENTROID LONGITUDE	11				Signed, decimal in position 74

Nation Mid File Record Layout: woxx0ntb.*

Field	Size	Decimal	Type	Justify	Description
NATION NAME	50	-	C	l	Nation Name
NATION ABBR.	2	-	C	f	Nation Abbr

Record Type 7: Landmark Features

Record Type 7 contains landmarks, major water, all water and airport information including name and landmark ID. If a county tile has no landmarks and no airport information, it will not have any Record Type 7. Coordinate values are filled for point landmarks only. Area landmark cordinates are defined by Type 1 and Type 2 records. Coordinate values have implied six decimal places and are preceded with a "+" for latitude and "–" for longitude. The unused numeric field at the beginning of a longitude value is blank.

Field	Size	Type	Justify	Fill	Description
RT	1	C	f		Record Type (value "7")
VERSION	4	C	f		GDT Version Number
STATE	2	C	f	zero	FIPS State Code for File
COUNTY	3	C	f	zero	FIPS County Code for File
LAND	10	C	r	sp	Landmark Identification Number (Location identification number from Type 8 file)
SOURCE	1	C	r	sp	Source Code
FCC	3	C	f		Feature Class Code
LANAME	30	C	l	sp	Landmark Feature Name
LONG	10	C	r	sp	Longitude (point only) (signed, implied 6 decimal places)
LAT	9	C	f		Latitude (point only) (signed, implied 6 decimal places)
FILLER	1	C	f	sp	Filler (to make even character count)

Record Type 8: Landmark Polygons

Each large area landmark, all water, major water, airport boundary or runway that is a complete polygon is assigned a unique ID in the TIGER Type 8 file. Note that some large area landmarks and major water areas may be regionalized with more than one feature containing the same ID.

Field	Size	Type	Justify	Fill	Description
RECORD TYPE	1	C	f		Record Type (value "8")
VERSION	4	C	f		GDT Version Number
STATE	2	C	f	zero	State FIPS Code for polygon
COUNTY	3	C	f	zero	County FIPS Code for polygon
FILE ID	5	C	f	zero	Polygon State and County FIPS codes
POLYID	10	C	r	sp	Polygon ID (left justified, filled out with blanks)
LAND	10	C	r	sp	Landmark identification number
FILLER	1	C	f	sp	to even the record length

Record Type A: Landmark Polygon Information

Field	Size	Type	Justify	Fill	Description
RECORD TYPE	1	C	f		Record Type (value "A")
VERSION	4	C	f		GDT Version Number
STATE FIPS	2	C	f	zero	State FIPS code
COUNTY FIPS	3	C	f	zero	County FIPS code
CENID	5	C	r	zero	
POLYID	10	C	r	sp	Polygon ID (right justified, filled out with blanks)
(15 more fields)	73	C	f	zero	Blank filled

Record Type I: Landmark Segments

Field	Size	Type	Justify	Fill	Description
RECORD TYPE	1	C	f		Record Type (value "I")
VERSION	4	C	f		GDT Version Number
DYNAMAP ID	10	C	r	sp	Permanent Dynamap ID
STATE FIPS	2	C	f	zero	State FIPS code
COUNTY FIPS	3	C	f	zero	County FIPS code
RTLINK	1	C	r	sp	Set to blank
FILE ID LEFT	5	C	f	zero	Left file ID
POLY ID LEFT	10	C	r	sp	Left side polygon ID
FILE ID RIGHT	5	C	f	zero	Right file ID
POLY ID RIGHT	10	C	r	sp	Right side polygon ID
FILLER	1	C	f	sp	To even the record length

Auxiliary Files 7

In This Section:

Name Correspondence File - USA Only

The Name Correspondence file (**dynaname.dbf** or **dynaname.txt**) provides a quick reference to relate state and county abbreviations and FIPS codes to county names. File layout is shown below.

Field	Width	Type	Description
STATE	2	C	State abbreviation
COUNTY	20	C	County name
FIPS	5	C	State and county FIPS
DYNA_NAME	6	C	State abbreviation and first four letters of county name

Geographic Entity Name File (GENF)

See Geographic Entity Name File on this Documentation CD.

If You Need Help 8

In This Section:

If You Need Help

Correction Policy

Our geographic data files are made as accurately as possible. If you find a problem, please contact us.

All corrections and problems are noted and examined as soon as possible. GDT makes every attempt to include any new information in the next product update.

Customer Support

If you have any questions about the files you have purchased, or are having difficulties with them, please call the GDT Customer Support Help Line at:

1-800-331-7881 or 1-603-643-0330

or contact us through the Internet at:

http://www.geographic.com/support/supform.cfm

Hours are Monday through Friday from 9:00 a.m. to 5:00 p.m., Eastern Standard Time.

Please have the following information available when you call:

- The product name and version number
- The format you received (for example, ArcInfo)
- The GDT Order Number (on the Packing Slip).

Contact Information:

Customer Support
Geographic Data Technology, Inc.
11 Lafayette Street
Lebanon, NH 03766-1445

Phone: 1-800-331-7881 or 1-603-643-0330
Fax: 1-603-643-6808
e-mail: support@gdt1.com

Appendices 9

In This Section:

- *Appendix A: Dynamap File Codes*
- *Reference Documentation*

Appendix A: Dynamap File Codes

The following codes appear in the Dynamap product line.

SOURCE CODES

The original digital source of the line segment, such as a Census Bureau 1980 GBF / DIME-File or a USGS 1:100,000-scale DLG-3 file.

Code	Description
(Blank)	Non documented
A	1980 GBF/DIME-File
B	USGS 1:100,000-Scale DLG-3 File
C	Other USGS Map
D	Census Bureau Pre-census Update
E	Census Bureau Enumerator Update
F	Census Bureau-Other Operations
G	Unconfirmed Local Official Updates

DIRECTION CODES

Code	Description
(Blank)	No Directional
N	North, Norte, Nord
S	South, Sur, Sul, Sud
E	East, Este, Leste, Est
W	West, Oeste, Ouest, Occidental
NE	Northeast, Nordestal, Nordeste, Nord-est
NW	Northwest, Noroeste, Nord-ouest
SE	Southeast, Suroriental, Sudeste, Sud-est
SW	Southwest, Sudoeste, Sud-ouest

Reference Documentation

See GDT Transportation Reference Documentation on this Documentation CD for links to detailed information on:

- Abbreviations for Street Designators
- Dynamap Definitions and Statistics
- Feature Class Codes
- Hours of Operation (HOO)
- State and County FIPS Codes
- GDT Abbreviations - Canada
- Province and Territory SGC Codes and Abbreviations

… and more.